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PART I

CORE PLAN

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ACRONYMS

ACBM	asbestos-containing building material
ACM	asbestos-containing material
AHERA	Asbestos Hazard Emergency Response Act
AMP	Asbestos Management Program
AO	Administrative Officer
APM	asbestos program manager
AR	Army Regulation
ASHARA	Asbestos Schools Hazard Abatement Reauthorization Act
CERCLA	Comprehensive Environmental Response, Compensation, & Liability Act
CFMO	Construction Facility Management Office
CFMO-FE	Construction Facility Management Office – Facility Engineering
CFR	Code of Federal Regulation
CO	contracting officer
DOT	Department of Transportation
DPW	Department of Public Works
EPA	U.S. Environmental Protection Agency
ERC	Emergency Response Contractor
HA	homogeneous area
HEPA	high-efficiency particulate air (filter)
HRD-PRMS	Human Resource Department for State Employees – Personnel Recruiting Management Section
HRO-PS	Human Resource Office for Federal Employees – Personnel Services
HVAC	heating, ventilation, and air conditioning
ID-CMB	Installation Division, Construction Management Bureau
ID-FMB	Installation Division, Facility Management Bureau
ID-OEC	Installation Division, Office of Environmental Compliance
ID-ORP	Installation Division, Office of Real Property
MAP	Model Accreditation Plan
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NIBS	National Institute of Building Sciences
NIOSH	National Institute for Occupational Safety and Health
NJDMAVA	New Jersey Department of Military and Veteran Affairs
NRC	National Response Center
O&M	operations and maintenance
OSH	Occupational Safety and Health
OSHA	Occupational Safety and Health Administration
PACM	presumed asbestos-containing material
PEL	permissible exposure limit
PEOSHA	Public Employee's Occupation Safety and Health Administration
PWTB	Public Works Technical Bulletin

RQ	reportable quantity
SAAO-SOHM	State Army Aviation Office – Safety and Occupational Health Manager
S&A	survey and assessment
TSI	thermal system insulation
VAT	vinyl asbestos floor tile
VFT	vinyl floor tile

GLOSSARY OF TERMS

ACM	Asbestos Containing Material – any material containing more than 1 percent asbestos.
Asbestos	The asbestiform varieties of serpentine (chrystile), riebecktie (crocidolite), cummingtonite-gunerite, anthophyllite, and actinolite-tremolite.
ACWM	Asbestos-containing waste material – means mill tailings or any waste that contains commercial asbestos and is generated by a source subject to the provisions of 40 CFR 61.140. This term includes filters from control devices, friable asbestos waste material, and bags or other similar packaging contaminated with commercial asbestos. As applied to demolition and renovation operations, this term also includes regulated asbestos-containing material waste materials contaminated with asbestos including disposable equipment and clothing.
Asbestos Program Manager	A building owner or designated representative who supervises all aspects of the facility asbestos management and control program.
Asbestos Abatement	Procedures to control fiber release from ACM in a building or to remove it entirely. These may involve removal, encapsulation, repair, enclosure, encasement, and operations and maintenance (O&M) programs.
Delamination	Separation of one layer from another. Any materials that contain
Friable Asbestos	greater than 1 percent asbestos and which can be crumbled, pulverized, or reduce to powder by hand pressure. This may also include previously non-friable material, which becomes broken or damaged by mechanical force.
Glove-bag	A polyethylene or polyvinyl chloride bag-like enclosure affixed around an asbestos-containing source [most often thermal system insulation (TSI)] so that the material may be removed while minimizing release of airborne fibers to the surrounding atmosphere.
HEPA Filter	High-Efficiency Particulate Air (HEPA) Filter. Such filters are rated to trap at least 99.97 percent of all particles 0.3 microns in diameter or larger.
Industrial Hygienist	A professional qualified by education, training, and experience to anticipate, recognize, evaluate, and develop controls for occupational health hazards.
Medical Surveillance	A periodic comprehensive review of a worker's health status. The required elements of an acceptable medical surveillance program are listed in the Occupational Safety and Health Administration (OSHA) standards for asbestos
Miscellaneous ACM	Other, largely non-friable, products and material such as floor tile, ceiling tile, roofing felt, concrete pipe, outdoor siding, and fabrics
NESHAPS	National Emissions Standards for Hazardous Air Pollutants (NESHAPS) – U.S. Environmental Protection Agency (U.S. EPA)

	Rules under the Clean Air Act.
NIOSH	The National Institute for Occupational Safety and Health (NIOSH), which was established by the Occupational Safety and Health Act of 1970. Primary functions of NIOSH are to conduct research, issue technical information, and test and certify respirators.
Personal Air Samples	An air sample taken with a sampling pump directly attached to the worker with the collecting filter and cassette placed in the worker's breathing zone. OSHA asbestos standards and U.S. EPA Worker Protection Rule require these samples.
Prevalent Level Samples	Air samples taken under normal conditions (also known as ambient background samples).
RACM	Regulated asbestos-containing material, means friable asbestos material, Category I non-friable ACM that has become friable. Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.
Surfacing ACM	ACM that is sprayed-on, troweled-on, or otherwise applied to surfaces such as acoustical plaster on ceilings, and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes.
TSI	Thermal System Insulation (TSI) – ACM applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural component to prevent heat loss or gain or water condensation.
TWA	Time-Weighted Average (TWA). In air sampling, this refers to the average air concentration of contaminant during a particular sampling period.

1.0 O&M PLAN MANAGEMENT AND ADMINISTRATION

1.1 GENERAL

This Operations and Maintenance (O&M) Plan for the New Jersey Department of Military and Veteran Affairs (NJDMAVA) is designed to establish guidelines for use in controlling potential airborne asbestos fiber exposure to occupants, employees, and contractor personnel who work within or enter buildings which have asbestos-containing material (ACM). Situations, which could release asbestos fibers into the air, have been considered and special work procedures set forth.

This O&M Plan is a guidance and training document for known or suspected ACM found in NJDMAVA facilities. A copy of this plan, asbestos abatement final reports, and all additional documentation found in Section 8 of this Plan is available in the facility armorer's office.

The Asbestos Abatement Report, Asbestos Hazard Evaluation Report (AHER), Asbestos Inspection Report, and Survey and Assessment (S&A) data for ACM used in the development of this Plan were collected by the New Jersey State Department of Health, AHERA Consultants, Inc., AET Environmental, Inc., B&G Restoration, Inc., BEM Systems, Inc., Certified Environmental Group, Inc., and E.A.I., Inc. during the 1984-2002 timeframe. Copies of the asbestos data for particular facilities or locations can be obtained from the NJDMAVA environmental office.

Part I of this O&M Plan contains general information on asbestos management, and discusses relevant regulations. Part II of this O&M Plan provides building-specific surveillance and maintenance guidelines. Part I of the O&M Plan is structured as follows:

Chapter 1	O&M Management and Administration
Chapter 2	Notification and Labeling
Chapter 3	Training
Chapter 4	Work Practices
Chapter 5	Maintenance/Renovation Request For Work Permit System
Chapter 6	Emergency Response Actions
Chapter 7	Periodic Inspection Forms and Systems
Chapter 8	Documentation

Part II of the O&M Plan contains the following information:

- Asbestos Inventory Report (A.I.R.)
- Work Practices
- Points of Contact
- Record Sheets

The following documents were used as references during the development of the O&M Plan.

- U.S. EPA Guidance Document 20T-2003, *Managing Asbestos in Place – A Building Owner's Guide to Operations and Maintenance Programs for Asbestos-Containing Materials*
- U.S. EPA Standard 40 CFR Part 61, Subpart M, *National Emission Standard for Hazardous Air Pollutants* (NESHAPS), *Asbestos Regulations*
  Regulation sets standards for asbestos mills, manufacturing, demolition/renovation, spraying, fabricating, insulating materials, and waste disposal.
- U.S. EPA Standard 40 CFR Part 302, *Designation, Reportable Quantities, and Notification*
- U.S. EPA Standard 40 CFR Part 763, *Asbestos-Containing Materials in Schools*, Final Rule and Notice, Asbestos Hazard Emergency Response Act (AHERA)
- U.S. EPA Standard 40 CFR Part 763, Subpart E, Appendix C, *Asbestos Model Accreditation Plan* (60 FR 27697, May 25, 1995)
- Public Law 101-632, *Asbestos School Hazard Abatement Reauthorization Act* (ASHARA), November 28, 1990
- National Institute of Building Sciences (NIBS) Guidance Manual, *Asbestos Operations & Maintenance Work Practices*
- OSHA Standard 29 CFR 1910.134, *Respiratory Protection*
- OSHA General Industry Standard 29 CFR 1910.1001, *Asbestos*
  This section applies to all occupational exposures to asbestos in all industries covered by OSHA except for construction work as defined in 29 CFR 1926.1101 and OSHA Standard 29 CFR 1915.1001, which cover occupational exposures to asbestos in the shipyard industry.
- OSHA Construction Industry Standard 29 CFR 1926.1101, *Asbestos*
  This section applies to all construction work including, but not limited to, the following:
  - Demolition or salvage of structures where asbestos is present;
  - Removal or encapsulation of ACM;
  - Construction, alteration, repair, maintenance, or renovation of structures, substrates, or portions thereof, that contain asbestos;
  - Installation of products containing asbestos;
  - Asbestos spill/emergency clean-up; and
  - Transportation, disposal, storage, or containment of asbestos onsite or location at which construction activities are performed.
- N.J.A.C. 5:23-8, *Uniform Construction Code, Asbestos Hazard Abatement Subcode*
- N.J.A.C. 7:26-1 et seq., (pertains to the generator's requirements for the management, transportation, and disposal of ACM)
- N.J.A.C. 8:60, *Asbestos Licenses and Permits*
- N.J.A.C. 12:100-12, *New Jersey Employee Occupational Safety and Health Act*
- Army Regulation (AR) 200-1
- AR 420-70
- PWTB 420-70-8

1.2 REGULATORY AGENCY OVERVIEW

The New Jersey Department of Environmental Protection (DEP) only regulates the management, transportation, and disposal of ACM. In concert with county health departments, the DEP investigates reports of unregistered transporters, illegal disposal, and oversees the review of the 10-day notification submissions.

The Department of Community Affairs (DCA), Asbestos Contractor Unit provides information on methods of asbestos remediation in schools and buildings in which public employees are located and regulates the air monitoring firms for asbestos abatement projects. DCA also licenses abatement contractors, abatement workers, and their supervisors. It also investigates complaints of improper abatements in commercial buildings.

Public Employee's Occupational Safety and Health Administration (PEOSHA) regulates worker health and safety for public employees.

The Department of Health (DOH) is the lead agency for the asbestos and environmental health information, administers the AHERA, provides site audits and administers the Quality Assurance/ Quality Control (QA/QC) program for asbestos abatement in schools. DOH also provides training and accreditation for asbestos training providers and conducts studies to evaluate asbestos abatement and management methods.

The United States Environmental Protection Agency (EPA) enforces AHERA and NESHAPS, and regulates ACM abatements in residences of more than 4 units, commercial buildings, and federal facilities.

1.3 IMPLEMENTATION RESPONSIBILITIES

The implementation and effective use of this manual requires a good working knowledge of the general information presented in Part I and requires training, which is described in Chapter 3. Part II forms provide building-specific maintenance recommendations and contain the surveillance information needed for training.

In accordance with AR 200-1, the Adjutant General (TAG) will appoint an Asbestos Program Manager (APM) with responsibility for the Asbestos Management Program. The key points of the management program include the building inspection by an accredited inspector and the subsequent development of a formal Asbestos Management Program (AMP). The major elements of the organizational structure as it relates to the AMP are described below.

- The TAG has the ultimate responsibility for the AMP for the NJDMAVA. The TAG will ensure that all O&M Plan requirements are implemented.
- The APM is directly responsible for providing occupants and employees a safe and healthy environment as it relates to the ACM located in their building. Further, the APM is responsible for minimizing the potential for exposing NJDMAVA personnel,

state workers, contractors, and visitors to asbestos during the use and regular maintenance of NJDMAVA facilities, as well as during the removal and disposal of ACM and suspected ACM. He/she coordinates all aspects of asbestos operations and/or oversight including coordinating local regulatory requirements with the New Jersey Department of Environmental Protection, Department of Community Affairs, PEOSHA, and the Department of Health. The APM shall annually review and update this O&M Plan to ensure it is current with applicable standards and state-of-the-art asbestos control technologies. In accordance with this O&M Plan, the APM will:

  - Hold a current AHERA Building Inspector and Management Planner accreditation;
  - Act as a competent supervisor when O&M work is conducted by NJDMAVA personnel;
  - Carefully follow all guidelines of the O&M Plan to minimize the potential for exposing building occupants and employees to airborne asbestos fibers;
  - Become familiar with all ACM in NJDMAVA facilities. Accordingly, ensure that all building occupants and employees are notified of the presence of ACM and the potential hazards of exposure to airborne asbestos fibers;
  - Assure that all NJDMAVA personnel and all those involved with the Asbestos Management Program have received formal training;
  - Mark the ACM and/or ACM areas with permanent signs and/or labels to warn building occupants, employees and contractors of the presence of ACM. If feasible, all ACM shall be labeled. However, entrances into maintenance areas, such as boiler rooms, where any physical disturbance of ACM may cause release of asbestos fibers into other areas of the building, shall be marked as detailed in Chapter 3, Notification. At a minimum, the posting of all signs and labels shall be in compliance with 40 CFR 763.95; 29 CFR 1926.1101, paragraph k; and 29 CFR 1910.1001, paragraph j;
  - Mark the ACM areas requiring restricted access with permanent signs to warn against entry by unprotected personnel. Building areas containing damaged or significantly damaged friable ACM are primarily examples of these areas. Warning sings detailed in Chapter 3, Notification shall be used. At a minimum, the posting of all signs and labels shall be in compliance with 40 CFR 763.95; 29 CFR 1926.1101, paragraph k; and 29 CFR 1910.1001, paragraph j. The Asbestos Inventory Report identifies the areas which require restricted access marking; and
  - Seek guidance from qualified asbestos management consultants when the APM determines that the complexity or seriousness of the situation is beyond the capabilities of in-house personnel (e.g., large quantities of ACM involved or abatement projects requiring specialized equipment and/or supplies for ACM removal);

- Facility managers, Administrative Officers (AO), shop chiefs, environmental and safety offices, Facility Management Office (FMO), and station armorers provide support to the APM.

- The asbestos safety control monitor's and asbestos abatement contactor's function is to provide specialized technical support to the APM during large abatement projects that are beyond the capabilities of the in-house personnel.
- Maintenance and custodial personnel are responsible for following the work procedures outlined in the Work Practices (Parts I and II) of this Plan and the NIBS Guidance Manual to minimize the potential for exposures to airborne asbestos fibers; for following the surveillance and maintenance schedules specified in this Plan; and for notifying the APM of degradation of the condition of the ACM.
- CFMO-Engineering and ID-CMB are responsible for providing technical support to the APM regarding building construction and drawings.
- The CFMO and ID-CMB advise the APM of all known building renovations/ modifications so that the disturbance of ACM is avoided. The CFMO assists in the implementation and management of O&M activities.
- CFMO-Engineering and ID-CMB shall provide written notification to all contractors where ACM is present to avoid accidental disturbances.
- ID-FMB shall provide written notification to the state maintenance force where ACM is present to avoid accidental disturbances.
- ID-ORP shall be responsible for notifying all NJDMAVA building leases of the location of any ACM to avoid accidental disturbances.
- Station armorers are responsible for maintaining a copy of this O&M Plan, any additional documentation in Section 8, and asbestos abatement final reports on file at the facility.

1.4 IMPLEMENTATION OF THE ASBESTOS MANAGEMENT PROGRAM

Asbestos management is defined as having a program in place that will ensure that the day-to-day management of a facility is accomplished in such a way as to prevent the release of asbestos fibers into the air. Asbestos management includes all that is necessary to control asbestos fiber release until that time when the ACM in a building is removed.

The principal purpose of an Asbestos Management Program is to minimize asbestos exposure to occupants, employees, contractors, and visitors to NJDMAVA facilities. To accomplish this, the O&M Plan must include work practices to maintain ACM in an undamaged condition, ensure the proper clean-up of any previously release asbestos fibers, prevent the future release of asbestos fibers, and monitor the condition of the ACM identified.

An effective O&M Plan will specifically address all ACM present in a facility. Special work procedures are required when normal maintenance and renovation activities are undertaken that could disturb ACM. This situation includes all asbestos management activities and any entry into areas, which may be contaminated with airborne asbestos fibers. These general requirements apply equally to NJDMAVA employees and outside contractors.

An O&M Plan implemented in a particular facility must also include specific direction on how to deal with ACM. Providing the specific direction will primarily be the responsibility of the individual assigned as the NJDMAVA APM. This individual is provided adequate

training in the various aspects of asbestos management and will act as the NJDMAVA focal point of contact regarding asbestos-related issues.

This O&M Plan shall be used in conjunction with the Asbestos Inventory Report provided for the buildings inspected and surveyed. O&M Work Practices, which are applicable to the various ACM identified in the inspection report, are contained in Chapter 4 and in the NIBS Guidance Manual. The procedures outlined are designed to minimize the potential for airborne asbestos fiber contamination of buildings during routine and emergency O&M activities, control the spread of contamination, and protect exposed personnel in those situations where potential airborne fiber releases may occur.

All personnel (including contractor employees) who work in buildings containing ACM shall be notified of the presence of these materials in the building (see Chapter 2, Notification) and trained to identify activities that could result in disturbances of ACM (see Chapter 3, Training). All personnel shall be thoroughly familiar with the asbestos warning signs. Furthermore, the key to an effective AMP is the proper training of all personnel involved with asbestos management as outlined in Chapter 3, Training.

1.5 BACKGROUND INFORMATION ON ASBESTOS

1.5.1 Types of Asbestos

Asbestos is a general term used to refer to a group of naturally occurring fibrous minerals chemically described as hydrated silicates. These minerals are divided on the basis of molecular structure into two groups: (1) chrysotile, antigorite, and lizadite are included in the serpentine group; and (2) crocidolite, actinolite, tremolite, amosite, and anthophyllite are included in the amphibole group. The various amphiboles differ from each other only in the proportions of different metals (aluminum, calcium, magnesium, and iron) in the crystal.

1.5.2 Occurrence and Properties

Chrysotile (also known as white asbestos) is mined primarily in Canada, Africa, the former United Soviet Socialist Republic, and scattered locations in the United States. Chrysotile is the only fibrous (asbestiform) member of the serpentine group. The most diagnostic physical property of a chrysotile fiber is its silky feel and appearance. A chrysotile fiber is usually a fine, elongated, flexible, and slightly curled. Since chrysotile demonstrates variegated color, the use of color as a diagnostic physical property is invalid. Chrysotile is very heat-resistant but easily degraded by acids and alkalies. Historically, about 95 percent of the asbestos used in this country was chrysotile from Canadian mines.

Antigorite and lizardite (both members of the serpentine group) are non-fibrous (non-asbestiform) and, therefore, are rarely encountered in commercial use.

Crocidolite (amphibole group), or blue asbestos, is mined mainly in South Africa and Australia. The fibers are less silky, coarser, and less workable than chrysolite, but still flexible. Chemical resistance is good, but heat resistance is poor.

Amosite (amphibole group), or light brown asbestos (it may e yellow or gray), is a trade name (derived from the initials for the Asbestos Mines of South Africa) given to fibrous cummingtinite and gunerite (mined in South Africa). These fibers appear silky but are coarse to the touch and not very flexible. Amosite has good chemical and thermal resistance because of the insulation provided by natural air pockets. However, problems arise during the removal of materials containing amosite, since it does not readily absorb wetting agents.

The other amphboles (anthophyllite, tremolite, and actinolite) are mined in various locations (Finland, Italy, South America) in small quantities. The fibers of all three are brittle with fair-to-good heat and chemical resistance. These materials are of minor commercial importance but do have specialty uses such as laboratory filters (tremolite) and plastic reinforcement (anthophyllite).

1.5.3 Commercial Uses

Ancient references to asbestos indicate knowledge of the material has existed for a very long time – perhaps over 2,000 years. Its use remained relatively restricted until the 1860s, when the growth of industry created a demand for a heat and chemical resistant fabrics and insulating materials. The world production of asbestos climbed steadily in the half century before 1940 then skyrocketed for the next 25 years with renewed economic growth and the introduction of new applications. Asbestos has been a very important industrial material. As of 1980, approximately 900,000 tons per year were used in the United States; about 70 percent in the construction industry. It is very difficult to find substitute materials, which fully duplicate the following characteristics, exhibited by asbestos.

- Flexibility;
- Tensile strength similar to steel;
- Resistance to heat, chemicals, and wear;
- Low abrasiveness; and
- High availability.

Until 1985, the greatest construction use for asbestos was in cementitious products such as pipe, shingles and siding, and electrical panels. The longer fibers were generally used in textiles. Friction products (such as clutch and brake facings) contain chrysotile for its high abrasion resistance and low abrasiveness. Other uses include floor tile, packing, gaskets, and insulation.

One use of asbestos materials developed in the 1940s was spraying of asbestos fireproofing onto structural steel for improved fire resistance. Countless multi-story buildings received this treatment until 1973, when the EPA banned the use of asbestos in all spray-applied applications.

In 1985, the EPA proposed banning the sale of nearly all products that contained asbestos. Although this ban has not been enacted, it has greatly reduced the production of asbestos-containing building materials.

1.6 EXPOSURE POTENTIAL

The primary route of exposure for asbestos is the inhalation of airborne asbestos fibers. If inhaled, asbestos fibers can cause diseases, which disrupt the normal functioning of the lungs. Therefore, one of the principal characteristics examined when determining the exposure hazard potential presented by an asbestos product is its friability. As defined in current U.S. EPA regulatory documents, friable is any material containing greater than one percent asbestos, which, when dry, may be crumbled, pulverized, or reduced to powder by normal hand pressure.

Friable products present a potential source of exposure and must be carefully guarded against damage or disturbance. In products where the fibers are firmly encased in a solid matrix (such as asbestos cement pipe or vinyl asbestos floor tiles), there is reduced danger of airborne asbestos fiber exposure unless they are disturbed, such as during manufacturing or cutting, demolition, grinding, drilling, or sanding operations.

Health concerns are likely to limit the possible applications of asbestos, but the material is unlikely to vanish completely from use. In spite of increasing awareness of the hazards of asbestos, some exposure continues in mining and manufacturing as well as hundreds of thousands of buildings, particularly those, which were constructed in the 30 years before the 1973 EPA ban on spray-applied asbestos fireproofing. These buildings are a potential source of exposure to millions of people, unless the asbestos is properly and safely managed.

1.6.1 Occupational Exposure to Asbestos

Personnel may be exposed in the work place to airborne asbestos fibers during activities that disturb or damage a known or suspected ACM. Typical examples include activities such as stripping of wax from asbestos-containing floor materials using a buffer with an abrasive pad, maintenance or repair work performed on ducting or piping systems insulated with ACM, and any other activity that could compromise the physical integrity of the ACM. Exposures to airborne asbestos fibers can also occur as a result of building occupants simply not knowing they are working with or near an ACM. Occupational exposures to airborne asbestos fibers can and must be minimized. The following chapters provide guidelines that must be implemented and followed if ACM in a facility is to be properly managed. Topics discussed include notification of building occupants, ACM surveillance, work permit/control systems, proper ACM work practices, record keeping, worker protection, and training.

1.7 HEALTH EFFECTS

The health effects of asbestos exposure include disabling respiratory diseases and cancers. The diseases associated with asbestos exposure typically have long latency periods (the time between first exposure and the appearance of the disease) on the order of 20 to 40 years. The epidemiological studies clearly show an increase in risk with increasing airborne fiber levels and increasing duration of exposure. Due to long latency periods of asbestos-associated diseases, those appearing now are the result of exposures from 20 or more years ago.

1.7.1 Asbestosis

Asbestosis is a disabling fibrosis or scarring of the lung, which shows up on a chest X-ray as scattered opacities. Frequently, the pleura (the membrane between the lung and chest wall) also show thickening and calcification bone plaques. The scarring causes the lung to become less elastic (stiffer), making breathing difficult. Also the area available in the lung for the exchange of gases is reduced, leaving the body starved for oxygen. For this reason, many asbestosis patients have a bluish color in the lips and tongue. In advanced cases, other symptoms of the disease include broadening or "clubbing" of the tips of the fingers and pulmonary rales, a crackling sound which can be heard during examination with a stethoscope. Severe asbestosis may obstruct the blood vessels of the lungs, leading to pulmonary hypertension (high blood pressure) and possible heart failure. This is caused by the resistance of the scar tissue and pleural plaques to the movement of the lungs during breathing. The lung changes are irreversible and often continue to worsen even after exposure to asbestos has stopped. The disease was first discovered in 1906, 40 years after the beginning of the use of asbestos in modern industry.

1.7.2 Cancers

Asbestos exposure has been associated with cancers in several internal sites: the lung, the pleura and peritoneum (the membrane covering the abdominal organs), and the gastrointestinal tract. The latency period of these diseases is longer than for asbestosis. The asbestos-cancer association is the main reason that OSHA recently lowered the limits for work place asbestos exposure to 0.1 fibers per cubic centimeter (f/cc) for an 8-hour time-weighted average (TWA).

An association between asbestos and lung cancer was suspected as early as 1935, however, the first epidemiological study, which solidly demonstrated an excess risk of lung cancer among asbestos workers was published 20 years later, in 1955. The lung cancer risk from asbestos exposure increases for smokers. The effect of exposure to cigarette smoke and asbestos together is synergistic, which means that the risk from the combined exposure is greater (up to ten times) than the sum of the risks of the two exposures taken separately.

Mesothelioma is a rare cancer of the pleura or the peritoneum. This is a rapidly progressive cancer almost always resulting in death within two years after discovery. Individuals with the disease usually have a history of exposure to asbestos.

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2.0 NOTIFICATION AND LABELING

An essential element of any O&M Program is to provide adequate notification and warning to parties who may be impacted by the presence of ACM in a building. Parties to be notified would include employees, custodial or maintenance workers, and/or outside contractors and/or building leases. NJDMAVA building leases, particularly schools or child daycare centers, must be informed of the location of ACBM under state and federal regulations so these areas are included in their own Asbestos Management Plans.

Employees can augment periodic surveillance practice by reporting damaged ACM, questionable work practices, and suspected fiber release episodes so that quick remedial actions may be carried out. Accordingly, they are provided with basic information regarding ACM in their particular facility.

Custodial and maintenance personnel must be aware of ACBM[1] locations, how to recognize these materials, and proper procedures to be followed to minimize any exposure during routine and non-routine activities.

Another group requiring notification of the ACBM includes contractors who may perform work in the building directly with or in the vicinity of ACBM. Typical examples include plumbing, HVAC, and roofing contractors. Individuals simply visiting these facilities do not require notification since they have no reason to disturb ACBM.

2.1 OBSERVATION OF SUSPECT ACM

Any of the following observations made by building occupants, custodial or maintenance workers, contractor employees, and/or building leases shall be reported immediately to the APM POC.

- Visual damage to or loose debris from the following suspect ACM:
    - Fireproofing;
    - Attic or wall insulation;
    - Acoustical materials;
    - Insulation on piping
    - Insulation on HVAC ducts and mechanical equipment;
    - Ceiling tiles and wall tiles
    - Floor penetration packing;
    - Floor tiles;
    - Plaster materials;
    - Cementitious asbestos materials (piping, siding, wallboard, roofing, etc.)
    - Roofing materials (shingles, felt, etc.); and

[1] Because the focus of most surveys is the facility, not the equipment and machinery that might be connected with the facility, the term asbestos-containing building material (ACBM) has been used throughout these reports rather than the term asbestos-containing material (ACM).

  - Any other suspect ACM.
- Damaged or missing asbestos warning signs;
- Breeches or openings in the existing suspended ceiling system if ACM is located above the ceiling;
- Performance of any work involving potential disturbances of ACM which is not in accordance with the work procedures described in this Plan;
- During building renovation or demolition operations, possible disturbances of hidden or inaccessible ACM (sealed pipe chases, above fixed plaster ceiling, inside wall partitions, etc.) such as fireproofing or insulation material or debris; and
- Entry into crawl spaces where soil may have been contaminated with asbestos debris.

2.1.1 Notification of the NJDMAVA APM

Upon notification of an ACM observation or potential disturbance, the APM or authorized representative must take immediate action. Depending on the potential severity of the situation, the APM may decide to take immediate precautionary measures (stop work, evacuate the area, etc.).

2.1.2 Review Asbestos Inventory Report

The APM, after receiving notification of a potential disturbance of suspect ACM, shall immediately review the NJDMAVA Asbestos Inventory Report. After review of the report, the following three situations may exist.

- **Material Was Reported In Asbestos Inventory Report.** If the report **does not** identify the material as asbestos, no further action or special procedures are required. If the report **identifies** the material as asbestos, the steps outlined in this chapter should be followed.
- **Material Was Not Reported In Asbestos Inspection Report.** Examples of situations in which no specific sampling data is available include roofing materials (typically not sampled because of the potential for creating roof leakage problems) and inaccessible or hidden areas. Where no specific sampling data is available, bulk samples must be collected by an EPA-accredited inspector and analyzed for asbestos content. If the sample analysis results indicate no ACM present, then no further action or special procedures are required. If the sample analysis results indicate the presence of ACM, proceed to **Material Identified as Asbestos**. In either case, the bulk sample analytical results and associated documentation must be incorporated into the NJDMAVA Asbestos Inventory Report in the O&M Plan for that facility.
- **Material Identified as Asbestos.** When the survey report or bulk sample analytical results indicate the presence of ACM, the steps reference in this chapter for notification and labeling should be followed.

2.2 HAZARD COMMUNICATION

Hazard communication via signs, labels, and written notifications is a requirement found in both the Occupational Safety and Health Administration's (OSHA) "General Standard for Asbestos" (29 CFR 1910.1001) and the "Construction Industry Standard for Asbestos" (29 CFR 1926.1101. Compliance with these portions of each standard is mandatory.

The General Industry Standard requires warning signs to be used in conjunction with regulated areas. Regulated areas are areas where airborne concentrations of asbestos exceed, or can be reasonably expected to exceed, the permissible exposure limit (PEL).

Given normal operational factors, asbestos-containing building material (ACBM) found at this facility would not be expected to exceed the PEL. However, the PEL could be exceeded during an activity that disturbs the material. Under these conditions, warning signs would be necessary.

In addition, the General Industry Standard requires warning labels to be affixed to all raw materials, mixtures, scrap, waste debris, and other products containing asbestos fibers. This requirement does not apply if a bonding agent, coating, binder, or other material has modified the asbestos fibers. However, there has to be some proof provided that during reasonably foreseeable use, handling, storage, disposal, processing, or transportation no airborne concentrations exceeding the PEL and/or the excursion limit will be released. This point of decision will be referred to the Asbestos Program Manager at the state environmental office.

The Construction Industry Standard covers demolition, salvage, removal, encapsulation, construction, alteration, repair, maintenance, renovation, installation, spill/emergency cleanup, disposal, transportation, and housekeeping involving asbestos or products containing asbestos. OSHA specifies that the building and/or facility owner shall notify the following persons of the presence, location, and quantity of ACBM or presumed asbestos-containing material (PACM).

- Prospective employers applying or bidding for work whose employees reasonably can be expected to work in or adjacent to areas containing ACBM or PACM.
- Employees of the owner who will work in or adjacent to areas containing ACBM or PACM.
- On multi-employer work sites, all employees who will be performing work within or adjacent to areas containing ACBM or PACM.
- Tenants who will occupy areas containing ACBM or PACM.

This notification requirement is not necessary if the owner can demonstrate that PACM does not contain more than 1% asbestos using the methods prescribed in the Asbestos Hazard Emergency Response Act (AHERA).

Like the General Industry Standard, the Construction Industry Standard requires the use of warning signs to demarcate a regulated area. Likewise, 29 CFR 1936.1101 also contains similar requirements for labeling. However, the Construction Industry Standard does contain additional requirements regarding posting/labeling. The standard states that a building owner or employer, upon determining that previously installed ACBM or PACM is present in the building /facility, must post signs or affix labels in a manner such that employees will be notified of which materials contain PACM and/or ACBM. It specifies that the signs/labels be attached in areas where employees who are likely to be exposed will clearly notice them. The standard explicitly addresses mechanical rooms/areas that contain ACBM and/or PACM and signs that identify the material that is present, its location, and appropriate work practices, which, if followed, will ensure that ACBM and/or PACM will not be disturbed.

Signs and labels must be printed in large, bold letters on a contrasting background. They shall be used in accordance with OSHA's Hazard Communication Standard (HAZCOM) [29 CFR 1910.1200(f)] and shall contain the following information at a minimum:

Danger
Contains Asbestos Fibers
Avoid Creating Dust
Cancer and Lung Disease Hazard

2.3 EMPLOYEE/OCCUPANT NOTIFICATION

Part of the Asbestos Operations and Maintenance (O&M) Plan includes notifying building occupants of the presence of ACBM and PACM. See Chapter 8.0 "Documentation" for employee notification records. It is recommended that the APM use the following notification procedure for his/her facility.

1. Review the facility's AIR with the building occupants, noting areas where asbestos has been identified (ACBM) or where the presence of asbestos is presumed (PACM). Information on the description of ACBM and PACM, as well as its location in the facility, shall be provided to all employees. This information shall be part of the general employee awareness training (2-hours) that is mentioned in Section 3.2 of this plan. The form found on page 8-11 in Chapter 8.0 should be given to each employee once filled out. The forms found on pages 8-7 and 8-19 should be supplied to all employees in the facility to document training and copies should be retained with the O&M Plan.

2. A master copy of the O&M Plan for each facility, including the Asbestos Inventory Report (AIR), is kept on file in the State Maintenance Force office (CID-FMB-OM) for review by employees of the state maintenance force.

3. Label all ACBM and PACM identified in the Asbestos Inventory Report with the OSHA-prescribed labels found on pages 8-21 and 8-23 in Chapter 8.0. Some materials such as roofing tiles, floor tiles, window glazing, caulk, etc., may be difficult to label directly. In this case, notification can be achieved by posting the form from page 8-11 and/or by using signs at the entrance to rooms/areas containing ACBM or PACM.

4. Conduct general awareness training for maintenance and custodial personnel who could potentially disturb ACBM or PACM in the facility. Supply each of these individuals with a copy of the forms from page 8-7 and go over the asbestos inventory report for their facility. The training shall cover procedures to minimize exposure to asbestos.

5. Provide immediate warning to building occupants if ACBM or PACM is damaged as a result of an unexpected event such as a water leak, a flood, a storm, etc. The Fiber Release Episode Record Form should be filled out and placed in the O&M Plan. Personnel should be warned in writing and/or by use of appropriate signs that hazard conditions are present. Locking doors and/or barricading entrances are also possible actions under these conditions.

6. If it is determined through proper sampling and analysis that materials assumed to contain asbestos (PACM) do not contain asbestos, then sign/labels/notification can be removed or deleted.

2.4 OUTSIDE CONTRACTOR AND LEASE NOTIFICATION

Contractors and subcontractors working at this facility and lessees occupying this facility shall be notified in the same manner as employee/occupants, as outlined in Section 2.3. Contractor notification shall be performed by ID-CMB and/or CFMO-FE. All contractors, subcontractors, and lessees will review the O&M Plan and sign the Documentation form, page 8-9.

ID-CMB, CFMO-FE, and ID-ORP shall be responsible for notifying all contractors and leases of the location of all ACBM and PACM during the initial bidding stages of a project or lease negotiations, respectively. ID-CMB/CFMO-FE or ID-ORP is responsible for obtaining a signed notification form (page 8-9) from the contractor/subcontractor or lessee, respectively.

The contract documents or lease agreement shall contain an “asbestos management section”, which lists the location of all ACBM or PACM at the facility. The “asbestos management section” shall contain language that states the contractor/lease shall not disturb any ACBM or PACM unless coordinated through the APM. An example of the language to include is:

> “Contractor/Lease shall not perform any renovations, remodeling, or construction in any area of a NJDMAVA facility without first thoroughly reading the O&M Plan for that

facility and coordinating such activities through the NJDMAVA APM. Contractor/Lease shall not disturb any area of a NJDMAVA facility where ACM or PACM has been identified without first coordinating such activities through the NJDMAVA APM."

A copy of the signed form shall be distributed to the AMP and a copy shall be kept on site at the facility.

2.5 MATERIAL LABELING

As previously stated, the marking of ACBM and/or ACM areas with permanent warning signs or labels is another effective method that is used to warn building occupants and employees of the presence of ACM. If feasible, all ACM should be labeled. However, in instances where the material itself cannot be labeled, warning signs should be posted at the entrances into areas such as boiler rooms or mechanical rooms where ACM are located. These warning signs may be used in lieu of labels if they contain the information required for labeling. At a minimum, the posting of all signs and labels shall be in compliance with AHERA and OSHA regulations (40 CFR 763.95; 29 CFR 1926.1101, paragraph k; and 29 CFR 1910.1001, paragraph j).

The use of controlled areas is an administrative control method that can be used by the APM to prevent exposure to asbestos. Controlled areas are usually rooms/areas in which ACBM and/or PACM is damaged and the extent of damage is widespread. These areas also tend to be areas of low access that are not readily abated because of cost constraints. Good candidates for controlled areas are attics, mechanical rooms, crawl spaces, etc.

ACM areas requiring restricted access shall also be marked with permanent signs to warn against entry by unprotected personnel. Building areas containing damaged or significantly damaged friable ACM are primary examples of restricted access areas. At a minimum, the posting of all signs will be in compliance with AHERA and OSHA regulations.

As mentioned before, all ACBM and PACM shall be labeled unless they meet the OSHA exemption or involve circumstances that make labeling difficult. Use the labels prescribed by OSHA, found on pages 8-21 and 8-23 in Chapter 8.0. In areas where languages other than English are predominant, warning signs and labels should be printed in those languages. As needed, graphics (pictures) should be used to supplement the printed warnings.

2.6 CONTROLLED AREAS

The entrances to controlled areas are usually kept locked, or otherwise limited, to prevent unauthorized personnel from entering. The notification stickers inform workers that they are entering an area containing ACBM. Also, the O&M Plan may need to have controlled areas added or deleted as material conditions, the use of the area, or maintenance requirements change.

The purpose of the controlled area designation is to inform workers before they enter an area that their activities may disturb ACBM. The maintenance staff, knowing that the area includes ACBM, must use proper techniques and have proper training, as prescribed by the O&M Plan, to perform maintenance that disturbs ACBM. In addition, the workers must contact the APM before doing any work on ACBM or PACM in the area. Refer to Chapter 8.0 "Documentation" for work permit forms.

Before removing ACBM, the U.S. Environmental Protection Agency (EPA) and the state must be notified by the Abatement Contractor and/or the APM. This notification also must be given before demolishing a building containing ACBM.

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3.0 TRAINING / MEDICAL REQUIREMENTS

3.1 INTRODUCTION

A key element of initiating and carrying out this O&M Plan is training personnel on the methods for managing asbestos in place and the methods for protecting themselves from exposure to airborne asbestos. Training is also a requirement of OSHA's regulations for asbestos.

Prior to implementing this O&M Plan, the APM and his/her representative shall receive adequate training so they can effectively execute and enforce the requirements of this O&M Plan. This training shall include the AHERA Building Inspector and Management Planner accreditation training; EPA 16-hour O&M Course; and the relevant federal, state, local, and Army regulations concerning asbestos.

In conjunction with implementing the asbestos O&M Plan, the APM, in conjunction with the federal and state health and safety offices, shall institute a training program in accordance with OSHA, U.S. EPA, New Jersey, and Army asbestos regulations for all personnel who work with or around ACM. All employees (building occupants) including custodial and maintenance workers shall be required to have formal training on selected asbestos-related subjects. This requirement shall also apply to all contractors prior to conducting work in the building. The training safety precautions and techniques are essential to avoid exposure. The APM, in conjunction with the federal and state health and safety offices, shall determine when outside-accredited training organizations will be used to provide the required asbestos training. All training shall be documented, and a record of each employee attending shall be kept in the Asbestos Management Program File.

The state/federal health and safety offices shall develop a Respirator Protection Plan and a Medical Monitoring Plan for all state/federal employees, respectively, who may be exposed to asbestos.

3.2 ASBESTOS WORKER CLASSIFICATION

OSHA classifies asbestos-related activities into four categories: Class I, which involves the highest potential for exposure to asbestos, through Class IV, which has the lowest potential exposure to asbestos. Subsequently, the control measures and training requirements are more rigorous for Class I and II operations and less rigorous for Class III and IV. The following are OSHA's training requirements by class.

Class I — Removal of thermal system insulation ACBM, surfacing ACBM, and PACM requires the following:

a. EPA Model Accreditation Plan (MAP) 4-day Worker Course participation,
b. Respiratory Protection Program participation,

c. Medical Surveillance Program participation, and
d. Supervision by a "Competent Person", which requires the EPA-MAP 5-day Contractor Supervision Course.

Class II — Activities involving the removal of ACBM which is not TSI or surfacing ACBM; ACBM and PACM that is **not** "high risk" (e.g., wall board, floor tile and sheeting, roofing and siding materials, and construction mastics) requires the following:

a. EPA-MAP 4-day Worker Course participation,
b. Respiratory Protection Program participation,
c. Medical Surveillance Program participation, and
d. Supervision by a "Competent Person", which requires the EPA-MAP 5-day Contractor Supervision Course.

Class III — Repair and Maintenance activities in which ACBM and PACM is likely to be disturbed; does not include activities designed to remove ACBM requires the following:

a. EPA 16-hour O&M course participation (which is inclusive of the 2-hour General Awareness Course),
b. Respiratory Protection Program participation, and
c. Medical Surveillance Program participation.

Class IV — Maintenance and Custodial work where employees contact, but do not disturb, ACBM and PACM, including activities that include clean-up of ACBM and PACM waste debris, requires the following:

a. Two-hour General Awareness Training participation,
b. Respiratory Protection Program participation (may require), and
c. Medical Surveillance Program participation (may require).

3.3 EMPLOYEE TRAINING

NJDMAVA personnel will only be involved with asbestos-related activities of the Class IV category. Following is a list of the suggested training for the various NG personnel.

Personnel	Suggested Training	Duration
Maintenance and Custodial	General Awareness	2 hours
Maintenance (job duties involved removal or disturbance of small areas of ACBM to repair/maintain systems	O&M (includes hands-on training)	16 hours
Maintenance Supervisor	O&M	16 hours
Asbestos Program Manager	AHERA Inspector/ Management Planner	5 days

In addition, all employees who work at a facility where ACBM or PACM has been found will have some training in the health effects of asbestos, use of asbestos in building systems/materials, location of asbestos in the facility, and measures to protect individuals from exposure to asbestos.

Training update sessions will be provided periodically to indicate any revisions to the O&M Plan or changes in ACBM or PACM in the facility. In addition, OSHA requires that all maintenance staff performing Class III and IV work attend annual refresher training sessions.

New employees will be trained on the location of ACBM/PACM and safeguards as part of their orientation program. Each new maintenance and custodial employee will be given asbestos general awareness or O&M training (if applicable).

3.4 TRAINING PROGRAM ELEMENTS

3.4.1 Asbestos Awareness Training

This is the first level of training to be held and is intended as an introduction to asbestos and the O&M Plan. Building occupants not disturbing asbestos are only required to have basic asbestos awareness training, which may consist of informational meetings, pamphlets, videos, etc. At least 2 hours of this training shall be provided to all employees including maintenance and custodial personnel. Asbestos Awareness Training shall, at a minimum, meet the requirements as specified in U.S. EPA Standard 40 CFR 763, Asbestos-Containing Materials in Schools; Final Rule and Notice, Asbestos Hazard Emergency Response Act (AHERA) (Appendix G), as amended by the Asbestos School Hazard Abatement Reauthorization Act (ASHARA) and OSHA Construction Industry Standard 29 CFR 1926.1101, Asbestos, as amended (Appendix H).

Typical topics to be covered as part of this training include the following:

- Purpose of the O&M Plan;
- Methods of recognizing asbestos, including certain building materials presumed to contain asbestos;
- Overview of asbestos uses and forms;
- Health risks associated with asbestos exposure;
- Relationship between smoking and asbestos in producing lung cancer;
- Effect of O&M Plan on building occupants and their responsibilities;
- Requirements that all maintenance activities, use of contractors, and renovation must be coordinated through the APM;
- Basic knowledge of current applicable regulations;
- General overview of the O&M work procedures and control methods, including PPE as detailed in this document; and
- Recognition of damage to ACM.

3.4.2 O&M Training

O&M training shall be provided to all personnel designated by the APM as part of the NJDMAVA ACM O&M Team that will be performing maintenance tasks that could involve the repair, removal, or cleaning of small amounts of ACM in accordance with the O&M Plan. The training shall include as a minimum the topics covered in the 2-hour Asbestos Awareness Training course described above. Fourteen hours of additional training shall include but will not be limited to:

- Classification of asbestos-related work;
- Descriptions of and hands-on training on the proper methods of handling ACM;
- Hands-on training on the proper use and maintenance of respiratory protection and other personal protective equipment;
- Hands-on training on the preparation of asbestos work areas;
- Hands-on training on the proper use and maintenance of asbestos abatement equipment;
- Basic understanding of current applicable regulations; and
- Medical requirements.

3.4.3 Abatement Worker Training

The APM shall also establish a training document review procedure to ensure that asbestos contractor personnel possess the required training for the work being planned. This training requirement can also be made a contractual requirement for asbestos abatement projects conducted by outside contractors. Regardless of who conducts the asbestos management projects in NJDMAVA facilities, worker-training records shall be maintained (typically at the job site) and be made available for review by the APM or his/her representative.

A typical worker-training program requires four days of training that includes, but is not limited to, the following major topics:

- Course overview;
- Physical characteristics of ACM and methods of ACM recognition;
- Potential health effects related to asbestos exposure, including personal hygiene;
- Association between the use of tobacco products and asbestos exposure in producing lung cancer;
- Activities that may result in exposure to asbestos;
- State-of-the-art work practices:
    - Site preparation (including the use of warning signs and labels);
    - Containing airborne asbestos fibers/engineering controls;
    - Decontamination procedures;
    - Proper clean-up and disposal procedures;
    - Use of negative pressure exhaust ventilation systems and HEPA vacuum equipment;

  - Glove bag techniques;
  - A minimum of hands-on training relating to work practices used for various types of ACM encountered in each building; and
  - Other safety concerns (e.g., lockout/tagout procedures, emergency procedures, fall protection, noise exposure, etc.)
- Additional safety hazards;
- Air monitoring;
- Medical monitoring;
- Establishment of respiratory protection program;
- Worker protection and personal protective clothing;
- Relevant regulatory requirements, procedures, and standards; and
- General review and summary.

3.5 MEDICAL REQUIREMENTS

All personnel, including building maintenance and custodial workers who, according to this O&M Plan, are required to wear respirators, must receive a medical examination. This involves evaluation and forced expiratory value at one second of the workers' ability to wear respiratory protection equipment, specifically, negative pressure type filtering devices (air purifying respirators), which place stress on the worker's respiratory and cardiovascular systems. If the examining physician determines that the employee is capable of wearing an air-purifying respirator, he must conduct a chest roentgenogram and obtain a medical history to determine past or current respiratory diseases. The examining physician shall conduct the medical examination as required in OSHA Standards 29 CFR 1910.1001 (Appendix I) and 29 CFR 1926.1101 (Appendix H).

These examinations must be given to workers within 30 days of employment, annually during the length of employment, and at termination of employment. The worker cannot wear a respirator until medical approval is obtained.

All records of medical examinations for employees shall be maintained in their medical files. These records are subject to OSHA regulations and must be maintained for the duration of employment plus thirty (30) years and be available to the worker, his or her designated representative, and the Director of NIOSH.

The APM shall, if necessary, request that the asbestos abatement contractor for contractor employees provide records of required physical examinations. These records shall be maintained with other contract documents to verify compliance with all applicable regulations.

3.5.1 Personal Protective Equipment

All personnel working in or occupying areas contaminated with airborne asbestos fibers including routine cleaning, maintenance, minor work procedures, and major work procedures shall wear adequate protective clothing and be provided with an enclosed area to remove

protective work clothing and change into street clothing. Protective clothing shall consist of full-body disposable fabric coveralls including head and foot coverings.

All personnel working in or occupying areas contaminated with airborne asbestos fibers shall wear respirators equipped with filter cartridges that are jointly approved by NIOSH and MSHA for protection against asbestos fiber exposure. At a minimum, all respirators will be of half-face dual cartridge air purifying design. Filter cartridges will carry a HEPA rating.

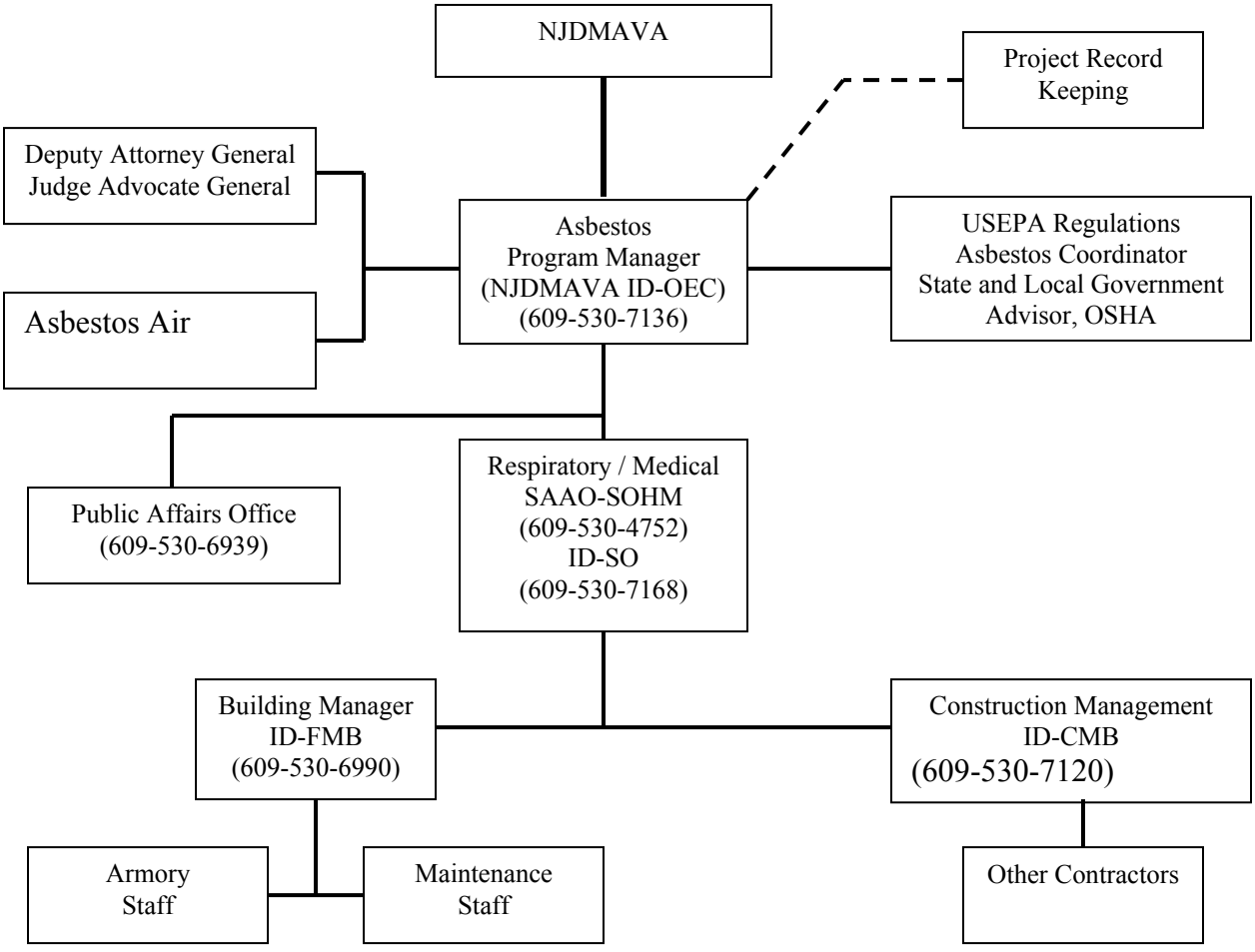
4.0 MAINTENANCE/RENOVATION REQUEST FOR WORK PERMIT SYSTEM

4.1 INTRODUCTION

To manage asbestos in place (the primary objective of an O&M program) a system must be in place that control access to ACBM/PACM in a facility and to control all work that could disturb ACM. Establishing and administering a permit system for any and all work performed in a facility containing ACBM/PACM is integral to a successful O&M program. The permit system ensures that any maintenance and/or renovation activities that might disturb asbestos are performed using properly informed and trained personnel. By administering a comprehensive work permit system; the NJDMAVA is assured that no one is inadvertently exposed to asbestos.

4.2 WORK PERMIT SYSTEM — ILLUSTRATIVE ORGANIZATION CHART

Following is an organization chart for the NJDMAVA Asbestos Management Program.



4.3 WORK PERMIT SYSTEM — ORGANIZATIONAL RESPONSIBILITES

Following are the identified functional titles associated with an O&M program. Beside each functional title are Roles and Responsibilities. It is imperative that in the process of implementing this O&M Plan, an APM be identified for the NJDMAVA. The APM will subsequently assign roles and responsibilities of the program to suitable personnel at each facility. This process will be documented in writing.

O&M Functional Title	Roles and Responsibilities
Asbestos Program Manager	1. Maintains overall responsibility for the O&M program. 2. Oversees all asbestos-related work (custodial, maintenance, and contractor) performed in the facility. 3. Oversee the work of outside contractors in the facility. 4. Administers the work permit system. 5. Performs periodic (6-month) re-inspections of ACBM/PACM in the facility. 6. Reviews and revises the O&M Plan as needed. 7. Maintains Asbestos Project Records. 8. Assists in training programs. 9. Prepares and distributes information on ACBM. 10. Ensures that outside contractors follow O&M procedures. 11. Must be AHERA accredited Building Inspector and Management Planner.
Facilities Maintenance Bureau (ID-FMB) / Construction Facilities Management Office (CFMO)	1. Participates in establishing cleaning and maintenance work practices. 2. Assists in implementing the O&M 3. Reviews all work performed to identify locations of ACM. 4. Reviews all NJDMAVA maintenance work projects to determine if work will involve ACBM/PACM disturbance. 5. Coordinates completion/submission of asbestos work permit form. 6. Notifies NJDMAVA maintenance work force of the location of ACBM/PACM.
Construction Management Bureau (ID-CMB)	1. Reviews all contractor work performed to identify locations of ACM. 2. Notifies contractors of the presence of ACBM/PACM. 3. Coordinates completion/submission of asbestos work permit form.
Office of Real Property (ID-ORP)	1. Reviews all NJDMAVA building leases to determine if lease will involve ACBM/PACM disturbance. 2. Notifies leases of the location of ACBM/PACM.

O&M Functional Title	Roles and Responsibilities
Public Affairs Office	1. Acts as liaison between NJARNG/NJDMAVA and public/private agencies concerning asbestos activities.
State/Federal Safety Office	1. Oversees the training of custodial and maintenance staff. 2. Oversees all training/medical surveillance of NJDMAVA personnel exposed to asbestos fibers.
DAG / JAG	1. Provides advice on legal requirements and liability issues.
Asbestos Consultant	1. Assists in various aspects of the O&M Plan – air monitoring, training, permit applications, inspections/assessments, and abatement planning and specifications.

4.4 WORK AUTHORIZATION PROCEDURES

NJDMAVA facilities may not initiate any maintenance, equipment installation, renovation, alteration, demolition, or any other project that may disturb ACBM/PACM until the APM is certain that either that no ACBM is present or that proper asbestos control procedures will be followed regarding ACBM that is present.

When an ACM is known to exist in a proposed work area, the necessary asbestos control procedures will be implemented. Appropriate asbestos control procedures will minimize the potential for creating an asbestos fiber release episode due to the disturbance or damage of the ACM. The APM will be responsible for conducting the asbestos review and completing the asbestos review section of the work request form. Copies of these forms will be maintained in the Asbestos Management Program file.

NJDMAVA requires a work authorization for any work that may disturb ACBM/PACM. The form and instructions that constitute the accepted work authorization form can be found in Chapter 8.0 “Documentation”, page 8-15.

The Minor Asbestos Abatement Report form on page 8-17 in Chapter 8.0 “Documentation” will be used for the approval and documentation of any work in areas that contain ACBM. The form serves as a chronological record of work events that occur in areas where ACBM may be disturbed.

4.5 WORK CONTROL

An effective O&M Plan will minimize unnecessary asbestos exposures to contractor and NJDMAVA personnel during their work activities. The APM, ID-CMB, ID-FMB, and CFMO must carefully review plans for facility construction projects in order to determine if an ACM is located in the planned construction area. Contractor, lease, and NJDMAVA personnel shall be made aware of the presence of ACM in the proposed work area so appropriate exposure control measures can be initiated. If required, appropriate asbestos abatement response actions shall be developed and implemented.

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5.0 WORK PRACTICES

ACM present in buildings have the potential to release airborne asbestos into the air when they are disturbed or damaged. Employees, custodial or maintenance workers, and/or contractors will be responsible for notifying the APM immediately upon discovery of any potential disturbance to ACM including maintenance activities or projects which may affect ACM directly or indirectly.

Prior to disturbing any ACBM or PACM, the Contractor or Custodial / Maintenance Worker is required to fill out Form 210 (Minor Asbestos Abatement Report, page 8-17) and submit it to the APM for approval.

5.1 INTRODUCTION

Untrained NJDMAVA employees must not disturb ACBM or PACM. Contractors or trained NJDMAVA staff should perform maintenance and abatement activities involving the disturbance of these materials. However, in some facilities there may be some very limited activities involving the disturbance of asbestos-containing materials that could be performed by NJDMAVA or state maintenance personnel. Examples of these activities are: drilling/nailing holes in asbestos-containing floor tile to mount equipment, drilling holes in asbestos-containing transite wall panels to mount equipment or fix a trip/fall hazard, removing short sections (<3 linear or square feet) of asbestos insulation to repair leaking pipes. All personnel, whether contractors or NJDMAVA personnel, shall conduct all work with ACBM or suspected ACBM in accordance with work practices contained in Part II of this Plan and the NIBS Guidance Manual.

Normally these activities should be localized in area and short in duration. In addition, due to the type of material involved and the short duration of the work, little asbestos exposure is involved. However, it is always prudent (and required by OSHA regulations) that proper work practices and procedures be employed when doing these jobs. The primary factors that are required are:

1. Isolate the area of disturbance to prevent exposure to uninvolved personnel.

2. Enclose the process to minimize exposure.

3. Control fiber release by using wet techniques and localized HEPA filter ventilation.

4. Clean the area to prevent subsequent exposure.

5. Seal exposed edges or damaged areas to prevent subsequent exposure.

6. Protect workers by using respiratory protection adequate for the job and other personal protective equipment (e.g., disposable clothing, safety glasses, gloves, etc.)

7. Monitor personnel performing the work to determine their asbestos exposure levels.

8. Perform air monitoring at the conclusion of the procedure to assure safe levels are present so that re-occupancy is permissible (only when friable ACBM is present and depending on the project scope).

It should be noted that employees performing these limited asbestos disturbance procedures should be trained to the level identified in Section 3.2 for Operation and Maintenance (O&M) Class III workers. This mandates at least 16 hours of training, which includes hands-on aspects of the procedures normally performed by these employees. In addition, an individual who is also, at a minimum, trained via the 16-hour O&M course must supervise the work.

All NJDMAVA employees performing activities, which disturb ACBM or PACM, will be in a medical monitoring program as prescribed by OSHA, as well as a respiratory protection program. Personnel air monitoring and records retention/management are also necessary, if asbestos disturbance procedures are instituted.

To enhance training of personnel performing these tasks and to minimize exposure potentials, a detailed written procedure (SOP) was developed for any and all anticipated activities that involve NJDMAVA personnel disturbing ACBM or PACM. The following SOP is for individuals who routinely encounter ACM during their O&M activities (less than 3 linear feet and/or 3 square feet).

1. Prior to starting the work, have the individual performing the work review the Asbestos Inventory Report (AIR) for the facility to determine if any ACM is present in the materials being worked on. The AIR is available at the state maintenance force office (IDFMB-OM) ad at the facility.

2. If the file review indicates asbestos is not present, work can continue.

3. If the files indicate asbestos is present in the materials being worked on or there is no record of testing of the material, the materials should be inspected and/or sampled to verify the presence of ACM by either ID-OEC or a contractor authorized by ID-OEC.

4. If the sampling/inspection indicates ACM is present, ACM must be removed by a contractor authorized by ID-OEC or by properly trained NJDMAVA maintenance staff prior to conducting the work.

5. If proper NJDMAVA staff conducts the asbestos work, PRIOR to conducting the asbestos work the individuals performing the work will fill out a Minor Asbestos Abatement Report Form (Form 210) found on page 8-17. Asbestos work will be

performed in accordance with federal and state regulations and the Asbestos Management Plan.

5.2 INITIAL AND ADDITIONAL CLEANING

5.2.1 Friable Material

In accordance with EPA's Managing Asbestos In Place – A Building Owner's Guide to Operations and Maintenance Programs for Asbestos-Containing Materials, initial cleaning should be conducted in all areas of a building where exposed and/or damaged asbestos-containing surfacing or thermal system insulation (TSI) is present. This is especially true if asbestos powder and/or loose debris is noted in the ACBM area. Initial cleaning shall be conducted using the following procedures:

- Don proper personal protection;
- HEPA-vacuum or steam-clean all carpets;
- HEPA-vacuum or wet-clean all the floors and all other horizontal surfaces; and
- Dispose of all debris, filters, mop heads, and cloths in sealed, leak-tight containers.

5.2.2 Non-Friable Material

The non-friable materials found in this building are not likely to release asbestos fibers unless ACBM/PACM is drilled, sawed, sanded, broken, or damaged. If damage occurs, then — depending on the severity of the damage — initial cleaning must be performed in the same manner as outlined below. Otherwise, initial cleaning may not be needed for these areas. If damage has occurred to the extent that the area has a high probability of airborne asbestos fibers, then the following procedures should be followed:

- Insulate the area containing the damaged material. This can be achieved by moving occupants out of the room or areas that is close to the damaged material, closing and locking doors (if possible), roping off the area, and posting the area using the signs/labels found on pages 8-21 and 8-23 in Chapter 8.0 "Documentation".
- Reduce additional exposure by eliminating air erosion, vibration, or ventilation system uptake. This can be achieved by turning off fans or other air-moving equipment, sealing ventilation vents, closing windows, and turning off any mechanical equipment close to the damaged material.
- Protect all workers involved in the cleanup activities by providing, at a minimum, half-face, negative pressure respirators with HEPA filters/canisters, disposable coveralls, foot covers, and gloves.
- Spray mist all loose material using amended water or spray encapsulant.
- Vacuum all loose debris using a HEPA-filtered vacuum.

- Repair and/or remove any material that could cause additional release of loose asbestos. Properly trained workers using methods prescribed by OSHA and the NJARNG should do this process.
- Wet-wipe all surfaces in the vicinity of the damaged material. Lock down the surfaces if necessary, using a spray adhesive or spray encapsulant.
- Dispose of all contaminated items, such as wipe cloths, cartridges, HEPA filters, vacuum bags, disposable clothing, etc. in 6-mil polyethylene bags properly labeled as asbestos waste. Dispose of the waste material in an acceptable landfill per OSHA/EPA/Department of Transportation regulations.
- Inform the APM of the completion of the work. The APM and the contractor should complete an inspection of the area, and acceptance of the cleanup should be documented.
- Depending on the scope of work, perform air monitoring to ensure levels in the area are safe for re-occupancy. Normally, NJDMAVA Class III work will not result in post-work air sampling. Air sampling shall be done at the direction of the APM (only when friable ACBM is present).

Although non-friable asbestos material does not offer a significant health threat, its condition should be monitored periodically to ensure conditions are not degrading to the point that an exposure potential is imminent. See Chapter 7.0 "Periodic Inspection Forms and Systems" for details on the periodic inspection process.

5.2.3 Additional Cleaning

The building areas that receive initial cleaning may also require periodic additional cleaning. The cleaning methods used shall be as outlined above. The frequency of cleaning will be determined by the APM or his/her representative and shall be based on the following factors:

- The noted condition of the ACBM;
- The potential for continued ACBM deterioration; and
- Observations made during the periodic surveillance inspections.

Equally important in the initial and additional cleaning tasks is the APM's responsibility to determine the cause(s) of recurrent fiber releases. The APM shall evaluate the adequacy of current asbestos management practices and procedures and if deemed appropriate, implement corrective measures to prevent the recurrence of the fiber release. If this is inadequate or impossible, the APM may deem the area a Restrictive Area and request the removal of the ACBM.

5.3 SPECIALIZED CLEANING PROCEDURES FOR JANITORIAL/MAINTENANCE TASKS

When performing any custodial or maintenance works in areas that contain ACBM, NJDMAVA employees must follow the applicable policies and procedures. Refer this chapter and Part II "Work Practices" of this O&M Plan, and the NIBS manual.

5.4 ASBESTOS-CONTAINING WASTE DISPOSAL

Asbestos waste, scrap, debris, bags, containers, equipment, and contaminated clothing consigned for disposal will be collected by the certified contractor and disposed of in sealed, labeled, impermeable bags or other closed, labeled, impermeable containers. Depending on the amount, a licensed waste carrier must perform transportation of the containers, and the containers must be transported to an approved landfill.

5.5 ROUTINE MAINTENANCE AND CLEANING

Typical activities and required work procedures for this category are detailed in the NIBS Guidance Manual. These types of activities are defined as Class III or Class IV (as described in Section 3.2) asbestos work per OHSA Construction Industry Asbestos Standard 29 CFR 1926.1101, Asbestos.

5.6 ABATEMENT ALTERNATIVES

The condition, accessibility, and location of ACM should be evaluated by the APM to determine the most appropriate remedial action(s). The following are the four general approaches to asbestos management under the O&M Plan.

1. **Material Removal**. The removal of all ACM is considered the final solution to the potential problem of asbestos exposure. If removal is performed properly, the potential for asbestos exposure is eliminated.

2. **Enclosure**. Enclosure involves construction of airtight walls and ceilings around surfaces coated with ACM. Since ACM will generally need to be removed when the building is renovated or demolished, or when maintenance occurs, enclosure may only be a temporary solution.

3. **Encapsulation**. Encapsulation involves application of a sealant into the ACM. Since ACM will generally need to be removed when the building is renovated or demolished, or during maintenance, encapsulation is only a temporary solution. Encapsulation (e.g., taping, painting) can be a good short-term solution for correcting minor damage to asbestos insulation coverings.

4. **Repair and/or Clean Up**. This method involves returning damaged ACM to an undamaged condition or to an intact state to prevent fiber release and clean up of existing asbestos-containing debris.

5.7 PLANNED PROJECT

All projects not categorized as emergency conditions or routine maintenance and cleaning shall be classified as a planned project. Planned projects are categorized by the APM in accordance with the guidelines contained in the OSHA Construction Industry Asbestos Standard 29 CFR 1926.1101, Asbestos, which classifies the different types of asbestos activities.

The APM or his/her representative must be contacted for direction regarding applicability of asbestos management work procedures before starting any projects or tasks. Examples of such projects/tasks are:

- Electrical and telephone wiring repairs, mechanical system and piping repairs, or any other work involving penetration of any ceiling or floors or the conduct or such work in a crawl space;
- Adjustments, repairs, or modifications to HVAC equipment;
- Non-routine cleaning of accumulated dust and debris, especially from areas with fireproofing and/or insulating materials;
- Building renovation, maintenance, or demolition; and
- Any other situations not listed where physical contact with suspect ACM is likely to occur.

If the action taken in response to a given situation is to be conducted by in-house personnel, the APM will ensure compliance with the requirements of all applicable policies, laws and regulations. The guidelines contained in the NIBS Guidance Manual shall, at a minimum, also be followed when responding to an asbestos situation.

A major consideration for planned projects is the phasing of the work. Minor projects may be scheduled outside of normal working hours. Major projects may require phasing on an area-by-area basis or during periods when the building is unoccupied. How an asbestos abatement project is accomplished should also be based on a cost-effective analysis and safety considerations. The APM, in conjunction with the asbestos abatement contractor and the facility staff, will determine the appropriate phasing for each project.

5.8 RESPONSE PROCEDURES IN DISASTER SITUATIONS

Depending on the area, materials, and quantities to be removed, the following techniques may be used by the outside contractor in emergency situations, as well as in other situations.

In disaster situations — such as tornadoes, fires, and earthquakes — ACBM may suffer significant damage and release asbestos fibers and pose immediate hazards to human health and the environment. The following procedures will be followed in these situations:

- Protect yourself from immediate danger before following any asbestos response procedures.
- As soon as the immediate emergency has passed, vacate the areas immediately.
- Contact the APM and follow his/her instructions.
- The APM will be responsible for contacting the response team or an asbestos abatement contractor and must issue a work permit order before the start of any asbestos abatement procedures.
- The APM shall notify state and local authorities when required.
- The contractor must immediately take all measures to vacate the area of unauthorized personnel, post warning and danger signs, and rope off or close off the area.
- Depending on the situation and severity of the damage, the contractor may use the abatement procedures list in this section or use full-containment, gross removal techniques.
- The APM shall oversee a post-work inspection to ensure the proper removal or repair and cleanup of ACBM before re-occupancy.

5.9 TEMPORARY CONTROL TECHNIQUES

The following procedures describe interim repair and control techniques for damaged or deteriorated ACBM. Individuals trained to the Class III or Class IV level (see Section 3.4 "Training") and properly fit-tested to wear a respirator shall be the only employees allowed to perform these operations. The repair techniques will generally be considered as temporary control techniques rather than alternatives to removal.

5.9.1 Debris

- Obtain work authorization from the APM before starting the work.
- Wear, at a minimum, disposable coveralls, gloves, and a half-face, dual cartridge, NIOSH-approved respirator equipped with HEPA filters.
- Remove movable objects in the work area, and cover fixed objects with polyethylene.
- Mist the entire work area with amended water.
- HEPA vacuum all the debris. Larger pieces may be picked up or wiped up and placed immediately in double, properly labeled, 6-mil polyethylene disposal bags.
- Dispose of all contaminated waste — such as cloth, cartridges, HEPA filters, polyethylene, and disposable clothing — in a properly labeled, 6-mil polyethylene disposal bag, dampen the bag, twist-tie, place in another bag, and twist-tie again.
- Provide documentation to the APM of the completion of work.

5.9.2 Roofing Materials

Roofing tar shingles and flashing are usually inaccessible to occupants. This material is the same as any other non-friable material. It does not pose a hazard unless drilled, sawed, or otherwise disturbed. If repair of the material is to take place, the following procedures will be addressed. Individuals performing these operations will be Class III trained if less than 3 square or linear feet of removal (see Chapter 3.0 "Training") and fit-tested to wear a respirator. If greater than 3 square or linear feet of removal, individual must be Class II or I trained.

- Obtain work authorization from the APM before starting the work.
- Wear, at a minimum, disposable coveralls, gloves, and a half-face, dual-cartridge, NIOSH-approved respirator equipped with HEPA filters.
- Establish a regulated work area, and then isolate the work area and post warning signs.
- Place a layer of polyethylene sheeting on the roof around the work area.
- Mist the area with amended water.
- Start the HEPA vacuum cleaner to collect any debris or residue.
- Carefully cut or remove the damaged area for repair, and place immediately in double, properly labeled, 6-mil polyethylene disposal bags.
- Clean the area until no residue is left.
- Depending on the situation and type of repair, different techniques and material may be used. Contact your APM for more instructions.
- Dispose of all contaminated waste — such as cloth, cartridges, HEPA filters, polyethylene, and disposable clothing — in a properly labeled, 6-mil polyethylene disposal bag, dampen the bag, twist-tie, place in another bag, and again twist-tie. Place in a steel or fiberboard drum, and dispose of at an approved landfill.
- Provide documentation to the APM of the completion of work.

5.9.3 Flooring Materials

Vinyl asbestos floor tile (VAT) and linoleum were used extensively in commercial and residential buildings, so they appear frequently in NJDMAVA facilities. Like other non-friable materials, VAT and linoleum do not pose a hazard unless drilled, sawed, sanded, buffed with an abrasive pad, or otherwise disturbed. However, it is possible, especially with VAT, that under certain conditions such as repeated exposure to water, temperature extremes, and high traffic (particularly heavy equipment or furniture movement) flooring materials may become loose and/or friable. If repair of the material is to take place, the following procedures will be addressed. Individuals performing these operations will be Class II trained (see Chapter 3.0 "Training") and fit-tested to wear a respirator.

Cleanup and General Preparation

- Obtain work authorization from the APM before starting the work.

- Wear, at a minimum, disposable coveralls, gloves, and a half-face, dual-cartridge, NIOSH-approved respirator equipped with HEPA filters.
- Establish a regulated work area, and then isolate and contain the work area and post warning signs.
- Mist the entire area with amended water.
- Pick up and/or HEPA vacuum all loose debris and immediate place in labeled, 6-mil polyethylene disposal bags.

Removal of Sheet Vinyl Floor Covering

- Before removal begins, vacuum the entire floor using a HEPA vacuum with a metal floor attachment.
- Slice the material with a sharp-edged instrument, such as a utility knife, into strips approximately four to eight inches wide.
- Roll up each strip tightly from end to end.
- As each strip is rolled up, spray a constant mist of water or amended water into the point were the material separates from the backing.
- After a strip has been removed, place it in a heavy duty, impermeable trash bag or other closed, leak-tight container.
- After three strips of flooring material are removed, after thoroughly wetting it, remove any residual felt with a stiff-bladed scraper. Place the felt scraping, while still wet, in an impermeable trash bag, or other closed, leak-tight container.
- As removal progresses, vacuum areas from which the flooring has been removed using a HEPA vacuum with a metal floor attachment.
- After the entire floor has been removed and has dried, vacuum it using a HEPA vacuum with a metal floor attachment.

Removal of Floor Tiles and Associated Adhesives

- Before removal begins, vacuum the entire floor using a HEPA vacuum with a metal floor attachment.
- Pry up each floor tile individually using a stiff-bladed scraper. If a tile does not release from the adhesive when the scraper is forced under the tile by hand, strike the scraper with a hammer to cause the tile to release and/or heat the tile (e.g., with a hot air gun) to soften the adhesive and facilitate removal.
- Alternatively, without first prying up floor tiles using a scraper, apply heat to the floor tile from a heat source (e.g., infrared heat machine) and remove the tiles by hand or by using a scraper.
- After the tile is removed, place it in a heavy-duty, impermeable trash bag or other closed, leak-tight container without further breakage.
- As small areas of floor are cleared of tile, remove residual adhesive to the extent necessary to prepared the surface for installation of new flooring material, by wetting and scraping using a stiff-bladed floor scraper.
- Alternatively, after the tile is removed, remove residual adhesive by using a low-speed floor machine and wetted sand or a removal solution.

- Place adhesive residues, while still wet, in a heavy-duty, impermeable trash bag or other closed, leak-tight container.
- Vacuum the area from which the adhesive has been removed using a HEPA vacuum with a metal floor attachment.
- After the entire floor has been removed and has dried, vacuum it using a HEPA vacuum with a metal floor attachment.

Depending on the situation and the type of repair, different techniques and materials may be used. Contact your APM for more instructions. Whatever method is used, all contaminated waste shall be disposed of in properly labeled, 6-mil polyethylene bags at an approved landfill. At the conclusion of the work the APM will be provided documentation of the completion of the project.

6.0 EMERGENCY RESPONSE ACTIONS

6.1 EMERGENCY RESPONSE CONTRACTOR/ABATEMENT TECHNIQUES

Too more safely and efficiently perform work on or around ACBM, NJDMAVA will contract with one or more certified asbestos abatement contractors on an as needed basis. Certified asbestos abatement contractors will be responsible for all removal and/or repair of ACBM. Examples of this kind of work are removal of pipe insulation for maintenance purposes or removal of water-damaged vinyl floor tile. Thus, the ERC will perform emergency as well as non-emergency abatements. After the completion of all work, including cleanup, the APM or the APM designee will conduct a post-work inspection to ensure the proper cleanup of all ACBM.

6.2 EMERGENCY RESPONSE PROCEDURES

Asbestos emergency situations may occur at any time as result of water damage, physical damage, or any other damage that might cause the release of asbestos fibers in the air and pose a hazard to human health and the environment. Any damage to asbestos materials requires special attention, and certain emergency procedures must be followed at such times. Following are lists of procedures to be followed by the employees, ID-FMB, ID-CMB, the APM, and the Emergency Response Team during an asbestos emergency.

1. Employee Response Procedures

a. Vacate the immediate area.
b. Set up barriers around the area to prevent anyone from entering the area (e.g., closing and locking doors).
c. Contact the APM and the Maintenance Supervisor or the Installation Head.
d. Follow instructions immediately.
e. Allow immediate access to the Emergency Response Contractor.
f. Cooperate with the contractor so that he/she can carry out this task in the fastest and safest way possible.

2. ID-FMB and ID-CMB Procedures

a. Obtain information regarding the location and the type of ACBM involved, as well as the extent and cause (or potential cause) of the damage.
b. Contact the APM and the state/federal safety offices, and provide all of the necessary information.
c. Follow the APM's instructions immediately.
d. Document the incident in the O&M Plan for ACBM.

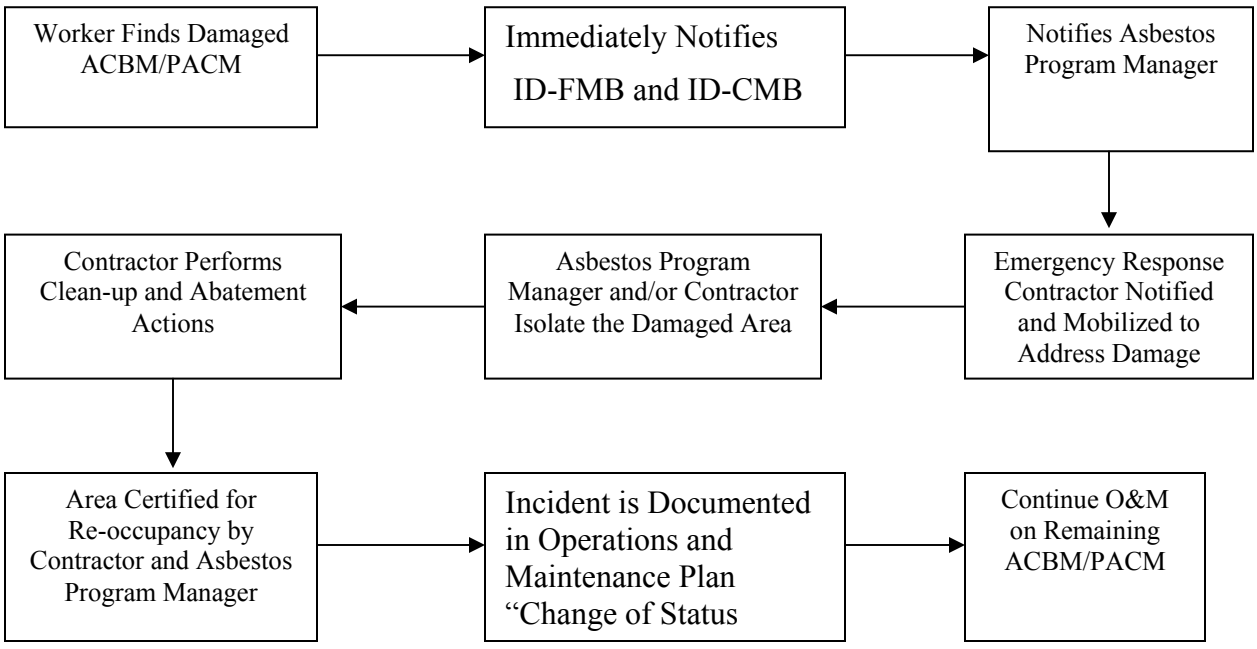
3. APM Response Procedures

a. Notify the Emergency Response Contractor.
b. Issue a work authorization to the Emergency Response Contractor before starting the work.
c. Notify state and local authorities before beginning abatement work. Allow adequate time for compliance with notification requirements.
d. Conduct a post-work inspection to ensure the proper cleanup of all ACBM.
e. Document the incident.

4. Emergency Response Contractor Procedures

a. Follow the APM's instructions immediately.
b. Obtain work authorization from the APM before starting the work.
c. Isolate the area.
d. Set up barriers around the area to prevent any unauthorized personnel from entering.
e. Set up signs warning of the asbestos removal repair work.
f. Employ all safety measures as outlined in the response action required for this situation (personal protective equipment, cleaning procedures, spot removal or repair, or glove bag procedures).
g. Determine the size of the fiber-release episode, and contact the APM.
h. Perform the repair or the removal of the damaged areas as required.
i. The APM will notify the ID-FMB and ID-CMB for posting of asbestos work notification on the employee bulletin board.

5. The following chart depicts the proper emergency response procedures for this facility.



6.3 EMERGENCY CONDITION FOR FIBER RELEASE EPISODE

Conditions with the potential for airborne asbestos fiber contamination of building areas are defined as emergency conditions or fiber release episodes. In accordance with AHERA, minor fiber release episodes are defined as the falling or dislodging of 3 square feet (sq ft)/3 linear feet (lf) or less of friable ACM (reference 40 CFR Part 763, Section 763.91, paragraph (f)).

6.2.1 Minor Fiber Release SOP

Specific procedures to be followed for minor fiber release episodes are outlined in the NIBS Guidance Manual and shall be handled in accordance with routine maintenance and cleaning procedures.

6.2.2 Major Fiber Release SOP

In accordance with AHERA, major fiber release episodes exist where the amount of ACM involved is greater than (>) 3 sq ft/lf. The response action for a major fiber release episode must be designed and conducted by U.S. EPA-accredited personnel.

Typical major fiber release episodes include but are not limited to:

- Fires, explosions, and earth tremors;
- Failure of structural members;
- Major delamination of insulation, fireproofing, or acoustical materials; and
- Water damage or physical damage to ACBM.

During emergency conditions, the APM or his/her representative and emergency staff must exercise careful judgment in implementing emergency procedures to minimize the potential for asbestos exposure and personal injury. Seriously injured personnel should be evacuated from the work area. Asbestos decontamination procedures may need to be waived or minimized when greater or immediate safety and/or health hazards exist (e.g., life-threatening injuries, explosion hazards).

The primary concern during emergency evacuation conditions is to protect the employees' health and safety. Once the employees have evacuated to a safe location, all gross asbestos contamination shall be removed from their body and clothing by vacuuming with HEPA filtered cleaners. Then they must remove clothing, shower, and change into clean clothing as soon as possible. The contaminated clothing should be disposed as contaminated waste or thoroughly laundered to remove residual asbestos fibers.

The contaminated building areas shall be sealed off, locked if possible, and signs posted warning personnel of the asbestos exposure hazard.

As soon as possible, air samples shall be collected and analyzed. The analyses of air samples will provide documentation of the airborne fiber concentrations with the subject areas. As soon as the emergency condition is stabilized, the APM or his/her representative shall determine whether in-house personnel can accomplish building decontamination or if outside assistance is required.

As mandated by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), in 40 CFR Part 302, Designation, Reportable Quantities, and Notification, any release of a friable form of asbestos must be reported to the proper authorities. Specifically, any individual in charge of a vessel or facility shall immediately notify the National Response Center (NRC) as soon as he/she has knowledge of a release from such vessel or facility of a friable form of asbestos in a quantity equal to or exceeding the reportable quantity (RQ) of one pound in any twenty-four hour period.

Generally, and as it pertains to friable forms of asbestos, a release is defined as any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, but excludes any release which results in exposure to persons solely within the workplace. These claims may be asserted against the employer, usually through worker's compensation.

All fiber release episodes must be properly documented (page 8-13) and all documentation should be maintained in the Asbestos Management Program File.

Any individual who is presumably exposed to asbestos fibers as a result of a release is required to submit an exposure incident report to HRD-PMRS or HRO-PS for state or federal employees, respectively. This report shall be kept on file for the duration of the individual's employment plus an thirty years after termination or retirement.

7.0 PERIODIC INSPECTION FORMS AND SYSTEMS

ACM presence in buildings is subject to deterioration by aging, the effects of building occupancy, and accidental damage. To monitor the changing condition of the ACM in the building, a program of periodic inspection is necessary, with optional air sampling. This program addressed under AHERA and in the U.S. EPA Guidance Document 20T-2003 (Appendix E), Managing Asbestos in Place – A Building Owner's Guide to Operations and Maintenance Programs for Asbestos-Containing Materials, is designed to track trends that may increase the potential for airborne asbestos fiber concentrations inside the building. The results of the periodic asbestos evaluation, including employee notification, should be kept in the Asbestos Management Program File.

7.1 INTRODUCTION

Inspections must be conducted as part of the asbestos O&M program to ensure that ACBM/PACM in the facility is being addressed adequately. Because of the nature of ACBM and systems, there is an ongoing potential for damage and deterioration that can change the condition of the material and increase the health hazard for facility occupants. The O&M program employs two types of inspection processes to achieve this function. One involves the ongoing observation of the maintenance staff, the other a more formal process by the APM or his/her designee.

Copies of inspection reports can be found in Chapter 8 of this O&M Plan. The Periodic Surveillance Report is utilized for periodic inspections. Inspections should be conducted on ACBM or PACM based on the material condition. Photographs of areas containing ACBM should be taken ensuring consistency in observations and determinations of condition, especially when there is a change in personnel conducting the observations and making condition determinations. Photographs should be logged and kept in the O&M Plan for future review. Electronic backups should also be kept for safety and for future comparison.

Visual inspections shall be conducted by personnel who have received specialized training in identifying and assessing the condition of ACM. The visual inspection will included observation of all ACM identified in the Asbestos Inventory Report including locations where any previous observation have been made and photographs have been taken. The ACM shall be examined for general condition, and indications of deterioration, delamination, erosion, water damage, or physical abuse should be noted.

If the material is bonded or encapsulated, appears in good condition, and no work or renovations have been conducted to alter the condition, semi-annual inspections shall be conducted, as is required in the AHERA standards. If the material condition is determined damaged or work and/or renovations are conducted that may change the ACBM condition, the APM or his/her representative should conduct more frequent inspections and a recommendation to repair or remove the ACBM. If the material condition is determined

severely damaged, the area should be isolated. No work should be conducted in these areas except by trained and certified personnel. Recommendations should be made to repair or remove the ACBM. Then, only if the ACM is repaired and remains in place the APM must determine if inspections can be done without disturbing the asbestos and without endangering the health of the inspector. If determined safe, periodic inspections should be conducted. Recommended periodic surveillance schedules are noted in the table below.

Periodic Surveillance Requirement Criteria

Exposure Hazard Criteria	Surveillance Requirement
Friable & Occupied	Semi-Annual
Non-Friable & Occupied	Annual
Friable and Not Occupied	Annual
Non-Friable & Not Occupied	Biennial
Roofs	Biennial

If changes in the materials condition are noted a Change of Status form must be filled out and a determination made by the APM regarding the frequency of future inspections. If significant change or deterioration is noted for the materials in a specific location, photographs shall be taken and asbestos management procedures initiated.

Factors to be considered during the inspection/assessment of materials consist of the following:

Friability: A property of material such that when dry it can be crumbed, pulverized, or reduced to powder by hand pressure.

Material Damage: Friable materials may release fibers whether they are damaged or not; however, non-friable materials release fibers only when damaged. Indication of contact or water damage includes evidence of debris near or around the material, dents, scrapes, delamination, flaking, peeling, and discoloration caused by water damage.

Exposed Surface Area: This factor indicates whether the material is visible and is important in evaluating potential fiber fallout levels and the possibility for building occupants contact and damage.

Accessibility and Vibration: An increase in accessibility and vibration may lead to additional day-to-day (ambient) fiber release.

Air Stream: Air stream across friable ACBM increases the potential for fiber release and building occupant exposure.

7.2 MAINTENANCE INSPECTION

Maintenance staff and custodial personnel will be alert to signs of changes in the condition of ACBM/PACM. Events such as roof leaks, boiler failures, steam leaks, and water line leaks/failures can seriously affect ACBM/PACM, causing its hazard potential to increase. In addition, during their normal duties, maintenance/custodial personnel will be looking for signs of physical damage, such as gouges in pipe insulation, gouges/holes in ceiling tile or acoustical treatments, deterioration/cracking of floor tile, and holes/cracks in wall plaster that could increase the potential for asbestos exposure. Any new development in material condition will be noted, described on a Change of Status Form, and provided to the APM.

7.3 SEMI-ANNUAL INSPECTIONS

At least once every six months, the APM will perform a detailed inspection of the facility using the Asbestos Inventory Report. The list of ACBM and PACM found in the report will be used to direct the APM's semiannual inspection. Each material and area identified in the survey report will be viewed and/or touched to ascertain if conditions have changed. A Periodic Surveillance Form must be completed by the individual performing the inspection and retained in the O&M record file. If any changes in material conditions are noted during the semiannual inspection, a Change of Status Form must be completed and placed in the O&M document file. The APM or other responsible party will then handle subsequent corrective actions.

7.4 REINSPECTIONS

In accordance with the AHERA standards, at least once every three years after a management plan is implemented, the APM must ensure that a thorough reinspection is conducted of all friable and non-friable known or assumed ACM identified for NJ ARNG facilities.

Personnel who have been trained and accredited in accordance with U.S. EPA Standard 40 CFR Part 763 (AHERA) shall conduct the reinspections.

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8.0 DOCUMENTATION

To document the progress of this asbestos program, as well as to provide evidence that this asbestos O&M Plan was in fact administered, a thorough and well-organized record-keeping system is absolutely necessary. All documents and records pertaining to renovations, maintenance, demolition, or other events where exposure to airborne asbestos fibers may occur shall be retained indefinitely in the Asbestos Management Program File in accordance with OSHA regulations. The O&M program records will be kept in an organized filing system in the office of the APM. Although there are many possible records that can be maintained in this system, there will be, at a minimum, those listed. All records need to be available for review by OSHA, EPA, employees, and other relevant personnel. Failure to comply could result in fines.

8.1 LIST OF OPERATIONS AND MAINTENANCE DOCUMENTS

O&M documents consist of the following:

- Periodic Surveillance Form
- Change of Status Form
- Employee Notification of Asbestos O&M Plan
- Outside Contractor Notification of Asbestos O&M Plan
- Notification of Asbestos Form
- Fiber Release Episode Record Form
- Work Request Asbestos Review Form
- Minor Asbestos Abatement Report
- Employee Training Documentation Form

8.2 OPTIONAL OPERATIONS AND MAINTNENACE DOCUMENTS

Optional items that may be added to an O&M record-keeping system are the following:

- Minutes of any advisory council meeting conducted to govern the O&M program.
- List of areas in the building where the removal or temporary encapsulation of ACBM has occurred.
- Copies of cleaning and repair handbooks issued to the maintenance staff.
- Air monitoring records.
- Lists of contractors doing work within the building and sign-off sheets indicating that they are given an opportunity to review the asbestos survey report and/or are informed of the location of ACBM within the building.
- Notification of Employers who might have occasion to perform work within the facility involving ACBM.

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PERIODIC SURVEILLANCE FORM

Retain Copy in *Asbestos Operations and Maintenance Plan*

Date: _____ **Building No.:** _____

Building Name: _____

Inspector's Name (print clearly): _____

Inspector's Signature: _____

Certification No: _____ **Expiration Date:** _____

Enter **"NSM"** if no suspect material is present.

ROOM	TYPE M/TSI/SURF	QUANTITY SF/LF/EA	FRI Y/N	A Y/N	COND G/D/SD	PD L/PD/PSD	EXTENT OF DAMAGEN/ L/D	COMMENTS

NOTES: _____

Legend is found on the back

LEGEND

NSM = NO SUSPECT MATERIAL

MATERIAL TYPE

M = MISCELLANEOUS
TSI = THERMAL SYSTEM INSULATION
SURF = SURFACING (SPRAYED, TROWELED, BRUSHED ON)

POTENTIAL FOR DISTURBANCE

L = LOW
PD = POTENTIAL FOR DAMAGE
PSD = POTENTIAL FOR SIGNIFICANT DAMAGE

MATERIAL QUANTITIES (UNITS)

SF = SQUARE FEET
LF = LINEAR FEET (PIPE RUNS, WIRE INSULATION)
EA = EACH (PIPE FITTINGS, WITH SIZE IN INCHES)

EXTENT OF DAMAGE

L = LOCALIZED
D = DISTRIBUTED
N = NONE

COND = CONDITION

G = GOOD
D = DAMAGED
SD = SIGNIFICANTLY DAMAGED

FRIABLE (FRI)

Y = YES
N = NO

ASSUMED (A)

Y = YES
N = NO

ROOM NUMBERING

101 = 1ST FLOOR, ROOM 01
202 = 2ND FLOOR, ROOM 02
A03 = ATTIC, ROOM 03
B04 = BASEMENT, ROOM 04
G01 = INSPECTOR'S GALLERY, ROOM 01
M05 = MEZZANINE, ROOM 05
E01 = EXTERIOR, ROOM 01
P101 = 1ST DETACHED BUILDING, ROOM 01

CHANGE OF STATUS FORM

Retain Copy in *Asbestos Operations and Maintenance Plan*

Date: _____ **Building No.:** _____

Building Name: _____ **Room:** _____

Inspector's Name (print clearly): _____

Inspector's Signature: _____

STATUS

Contact Damage: Y / N

Water Damage: Y / N

Other: _____

_____

_____

_____

Comments on Change of Status: _____

_____

_____

_____

_____

Action Taken: _____

_____

_____

_____

_____

_____

Action Approved By: _____ **Date:** _____
(Asbestos Program Manager)

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EMPLOYEE NOTIFICATION
OF ASBESTOS O&M PLAN

Retain Copy in *Asbestos Operations and Maintenance Plan*

Employee Name: _____

Employee Number: _____

Title or Position: _____

I have been afforded the opportunity to review the *Asbestos Operations and Maintenance Plan* for this facility. I agree to perform my work in accordance with the Plan or to inform ID-FMB if I am unable to do so. In such case, the Asbestos Program Manager will give instructions as required before any asbestos-associated work is done on the premises.

Signature: _____
(Employee)

Date: _____

Signature: _____
(Asbestos Program Manager)

Date: _____

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OUTSIDE CONTRACTOR & LESSEE
NOTIFICATION OF ASBESTOS O&M PLAN

Retain Copy in *Asbestos Operations and Maintenance Plan*

Company Name: _____

Company Officer: _____

Title: _____

Type of Business: _____

I have reviewed and understand the *NJDMAVA Asbestos Operations and Maintenance Plan*. My company, business, or entity will perform our work in accordance with the Plan or will inform the ID-CMB if unable to do so. In such case, the Asbestos Program Manager will give instructions as required prior to any asbestos-associated work.

Signature: _____
(Contractor / Lessee)

Date: _____

Signature: _____
(ID-CMB)

Date: _____

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ATTENTION

Occupants of the

An Asbestos Survey has been performed in this facility and the following materials were found to contain asbestos:

These materials will not be disturbed in any way without the authorization of the Asbestos Program Manager. An Operations and Maintenance Plan is on file in the Armorer's office for review upon request.

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FIBER RELEASE EPISODE RECORD FORM

Retain Copy in *Asbestos Operations and Maintenance Plan*

Date:_____ **Building No.:** _____

Building Name: _____ **Room:** _____

I, _____, observed damaged or significantly damaged
(Name, Title)

asbestos-containing material in the above building and room on approximately _____,
(Time)

_____ that would constitute a fiber release episode. I reported the episode to the
(Date)

following:

_____ _____
(Name, Title) Signature of Acknowledgement

Asbestos Material Involved	**Action Taken**

Action Approved By: _____ Date: _____

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WORK REQUEST ASBESTOS REVIEW FORM

File original with the APM in the Asbestos Management Program File

Date: _____ **Building:** _____

Work to be Performed and Area Involved: _____

_____

_____

Requestor/Title: _____

Asbestos Program Manager Review

1. Is ACM present in the planned work area? _____ **YES** _____ **NO**

2. If present, will ACM be affected by the planned work activities?
   _____ **YES** _____ **NO**

3. Is planned work approved? _____ **YES** _____ **NO**

Comments: _____

_____

_____

Asbestos Program Manager: _____
(Print Name)

Asbestos Program Manager: _____
(Signature)

Branch: _____ **Date:** _____

NOTE: If planned work is disapproved, provide comments to the Requestor; i.e., asbestos abatement work will be coordinated and scheduled or recommend other options for conducting the planned work.

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MINOR ASBESTOS ABATEMENT REPORT

To: ID-FMB
FM: _____

REF: NJARNGR 210-1
NJANG 85-1

SECTION 1 – GENERAL INFORMATION

FACILITY NAME	JOB PERFORMED BY	JOB DATE/TIME
WORK AREA(S)		REG. SUPERVISOR

DESCRIBE REASON FOR JOB:

SECTION II – SCOPE OF WORK

TYPE WORK

- ⎕ REMOVAL
- ⎕ REPAIR
- ⎕ ENCLOSURE
- ⎕ CLEANING

TYPE OF MATERIAL(S)

- ⎕ PIPE INSUL
- ⎕ BOILER INSUL
- ⎕ ELBOWS & JOINTS
- ⎕ CEILING TILE
- ⎕ FIRE WALL
- ⎕ OTHER _____

INITIAL LAB DATA

MAT.	LOC.	% BULK	AIR

QUANTITY OF MATERIALS	NO. OF DISPOSAL BAGS USED	TOTAL WEIGHT OF BAG(S)	STORAGE LOCATION
_____ LF _____ SF	_____	_____ LBS	

PERSONAL PROTECTIVE EQUIPMENT

- ⎕ DISPOSABLE COVERALLS
- ⎕ DISPOSABLE HEAD COVERING
- ⎕ DISPOSABLE GLOVES
- ⎕ DISPOSABLE FOOT COVERING
- ⎕ DISPOSABLE AIR HEPA RESPIRATOR

CLEAN-UP/REMOVAL/REPAIR EQUIPMENT USED

- ⎕ HEPA VACUUM
- ⎕ GLOVE BAG
- ⎕ DISPOSAL BAG (YELLOW, 6 MIL)
- ⎕ PLASTIC SHEETING
- ⎕ AMENDED WATER
- ⎕ WIRE BRUSH
- ⎕ OTHER _____
- ⎕ DUCT TAPE
- ⎕ WET CLOTHS
- ⎕ WATER SPRAYER
- ⎕ LAGGING TAPE & ADHESIVE
- ⎕ NON-ASBESTOS FILLER CEMENT
- ⎕ CUTTING TOOLS
- ⎕ OTHER

ENGINEERING CONTROLS USED

- ⎕ RESTRICTED WORK AREA(S) TO ASBESTOS WORKERS ONLY
- ⎕ WORK AREA ENCLOSED (6 MIL PLASTIC SHEETING ASBESTOS MATERIALS
- ⎕ WORK AREA ISOLATIONS (BOUNDARIES/BARRICADES)
- ⎕ SEAL SURROUNDING ASBESTOS MATERIALS DURING WORK ENTRANCE/EXIT
- ⎕ DOUBLE BAG AND SEAL ASBESTOS MAETERIALS FOR TEMP. STROAGE ON-SITE
- ⎕ HEPA NEGATIVE AIR PRESSURE VENTILATION UNIT(S) IN WORK AREA(S)
- ⎕ HEPA VACUUM
- ⎕ WATER SATURATED
- ⎕ GLOVE BAG METHOD
- ⎕ CAUTION SIGNS POSTED AT

CLEANUP PROCEDURES USED

Í HEPA VACUUM AND/OR BAG FALLEN METHOD Í DISCARD DISPOSABLE CLOTHING AS ASBESTOS WASTE
Í HEPA VACUUM ALL PERSONAL PROTECTIVE EQUIPMENT AND CLOTHING BEFORE EXITING WORK AREA(S)
Í HEPA VACUUM AND/OE WET WIPE ALL MOBILE EQUIPMENT/SUPPLIES BEFORE REMOVING FROM AREA(S) PRIOR TO WORK
Í HEPA VACUUM AND/OR WET WIPE TOOLS PRIOR TO REMOVAL FROM WORK AREA(S)
Í HEPA VACUUM AND WET WIPE RESPIRATOR IMMEDIATELY AFTER EXITING WORK AREA(S)
Í HEPA VACUUM AND/OR WET WIPE ALL EXPOSED SURFACES IN WORK AREA(S) AFTER WORK COMPLETION
Í WASH OR WET WIPE HANDS, FACE, AND NECK AFTER REMOVING RESPIRATOR
Í CAP RESPIRATOR FILTER AFTER CLEANING Í DISCARD TEMP. ENCLOSURE/CLEANING MATERIALS AS ASBESTOS WASTE

SECTION III – TRANSPORTATION / DISPOSAL / COMMENTS

TRANSPORTER	PICKUP DATE	DISPOSAL FACILITY	DISPOSAL DATE
NAME: ADDRESS: PHONE:		NAME: ADDRESS: PHONE:	

ADDITIONAL COMMENTS:

EMPL0YEE TRAINING DOCUMENTATION FORM

Retain Copy in *Asbestos Operations and Maintenance Plan*

Employee Name: _____

Employee Number: _____

Title or Position: _____

Training Course Title: _____

Hours of Training: _____

Training Site: _____

Instructor: _____

Date(s): _____

I received the above training as part of the facility's Asbestos O&M Plan. The intent of this training is to ensure I have adequate knowledge and information to perform my assigned job duties safely, without exposure to hazardous levels of airborne asbestos.

Signature: _____
(Employee)

Date: _____

Signature: _____
(Trainer)

Date: _____

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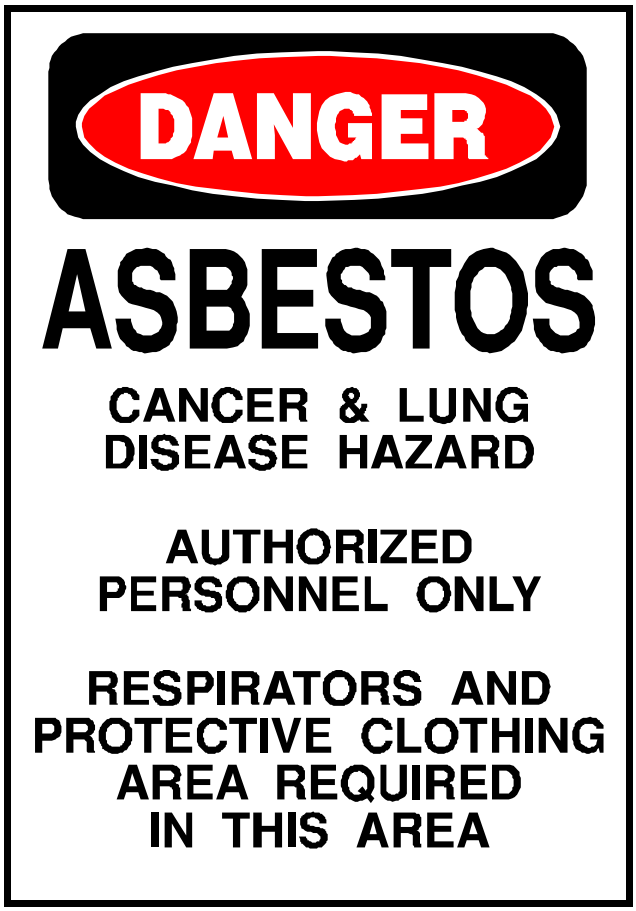
DANGER
ASBESTOS
CANCER & LUNG
DISEASE HAZARD
AUTHORIZED
PERSONNEL ONLY
RESPIRATORS AND
PROTECTIVE CLOTHING
AREA REQUIRED
IN THIS AREA

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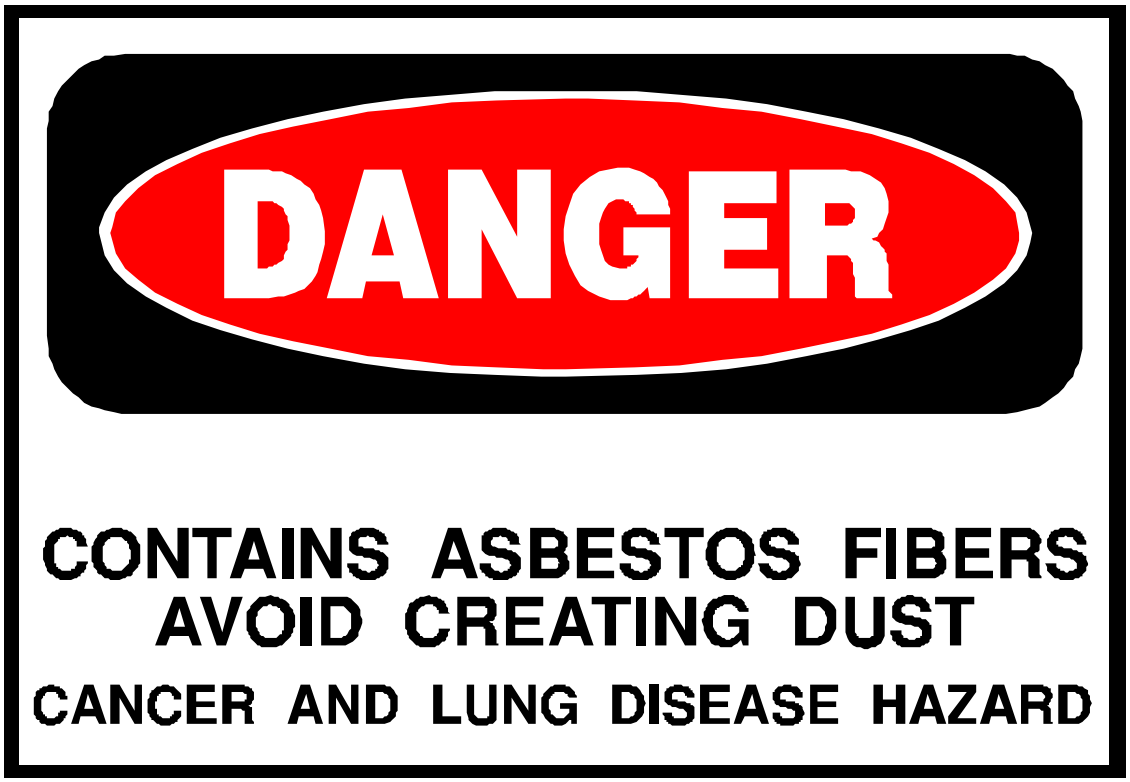
DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

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PART II

ASBESTOS INVENTORY REPORT
POINTS OF CONTACT
WORK PRACTICES
RECORD SHEETS

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ASBESTOS INVENTORY REPORT

This is not a comprehensive list of ACBM or PACM. Prior to conducting any renovations or building maintenance activities, contact the APM to verify the presence/absence of ACBM/PACM.

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WORK PRACTICES

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Class III

General Work Practices

For

Asbestos-Containing Material

Hazards

The guidance in this section is structured around Class III Level A work practices. New Jersey Department of Military and Veteran Affairs employees who receive only the Awareness Level training are restricted even within this level of work. The following definitions and explanations will help define this.

Level A: **Worker may contact ACBM but not disturb it. If they encounter damaged ACBM, or if the work could damage the ACBM, stop work and notify your supervisor.**

Class III: **Work is limited to maintenance and custodial activities, which do not disturb ACBM/PACM. The EPA does not consider the awareness training adequate for Class III workers conducting more than wet wipe of ACBM or PACM.**

U.S. EPA National Emission Standards of Hazardous Air Pollutants (NESHAPS) Asbestos Regulations (40 CFR 61, Subpart M) set standards for asbestos mills, manufacturing, demolition/renovation, spraying, fabricating, insulating materials, and waste disposal. Listed below are key requirements contained in the regulation.

Applicability
Thoroughly inspect the affected facility (or part of the facility) where demolition or renovation will occur for the presence of Category I, Category II, and friable ACM.

Standard
No visible emissions.

Notification Requirements

Renovations
- Quantities: > 160 sq ft or > 260 lf or > 35 cubic feet; and
- Submit notification form 10 working days prior to start date.

Demolition
- Notification required for all projects; and
- Submit notification form 10 days prior to start date.

Emergency Renovations
- Same quantities as for planned renovation;
- List details of emergency on Notification Form; and
- Notify as soon as possible.
- Emission Controls
    - Adequately wet;
    - Negative pressure enclosures and local exhaust ventilation and collection systems;
    - Glove-bag system;
    - Wrap and cut removal;
    - Leak-tight chutes for lowering ACM to ground;
    - Removal of intact facility components; and
    - Training (competent person).
- Disposal
    - No visible emissions to outside air during collection, processing, packaging, or transport;
    - Adequately wet;
    - Leak-tight containers or wrapping (e.g., double 6-mil plastic bags, cartons, drums, cans, or a combination);
    - Labeling
        - OSHA;
        - DOT; and
        - Generator name and site.

- Mark vehicle with warning signs during loading and unloading of ACM; and
- Verification: If waste generator does not receive waste shipment record within 35 days, contact transporter.

The NJDMAVA APM or his/her representative must be contacted for direction regarding applicability of asbestos management work procedures before starting any of the following listed projects or tasks:

- Electrical and telephone wiring repairs, mechanical system and piping repairs, or any other work involving the penetration of any ceiling or floor, or the conduct of such work in a crawl space;
- Adjustment, repair, or modification to HVAC equipment;
- Non-routine cleaning of accumulated dust and debris, especially from areas with fireproofing and/or insulating materials;
- Building renovation, maintenance, or demolition; and
- Any other situation not listed where physical contact with ACM or suspect ACM or PACM is likely to occur.

Surfacing Material

Level A work practices is a OSHA Class IV activity and should only be used in situations where the ACBM surface material is in good condition, there is no ACBM dust and/or debris on top of ceiling tiles, and ACBM above the ceiling will not be disturbed when the tile is lifted.

For work above ceilings or a similarly inaccessible space, the APM must make a determination that the exposed surfacing is in good condition, and that there is no ACBM, debris, or dust on top of the ceiling tiles or elsewhere in the plenum where it might be disturbed.

This determination should be made based on the training, skill, and experience of the workers; the condition of the ACBM surfacing material; and current and future activities that might affect the ACBM. The material should be periodically observed to determine if there has been a change in condition.

As a precaution, maintenance staff employees should be instructed not to remove ceiling tiles below ACBM unless they have had the 16-hour asbestos training, has the proper respiratory equipment, remove others from the area, and observe asbestos waste disposal procedures.

Thermal Systems Insulation

Spaces where TSI is located and to which access can be controlled such as a boiler room and above ceiling plenums should be designated “controlled areas,” and should be limited to trained personnel who know what ACBM is present in the space and know how to avoid disturbing it.

Work that occurs in the vicinity of TSI, but does not contact it and is not likely to disturb it is not given a level designation, but requires control to insure that a disturbance does not occur.

This requires awareness training to notify personnel about the ACBM, its location, and instructions to avoid disturbing it.

Level A work is an OSHA Class IV activity, where ACBM TSI is contacted but not disturbed. Careful handling, wet methods, HEPA vacuums, prompt clean up and disposal, and awareness training for workers is required.

Miscellaneous (generally non-friable)

Non-friable materials can survive high impacts without being disturbed. However, the surface characteristics of the material can be such that asbestos could be released from the surface upon contact even if the matrix of the material is not disturbed.

Generally, workers need to have more than awareness level training to do many Level A activities. Workers involved with roofing, siding, ceiling tiles, and transite need to have a minimum of 8 hours of training per category of material.

Flooring

Any work that involves removal or repair of resilient floor covering materials is Class II work and cannot be performed by NJDMAVA personnel without further training. Certain housekeeping operations, such as cleaning, buffing, or polishing can be done as Class IV work as long as the procedures are within the guidelines outlined in the general industry standard, 29 CFR 1910. 1001. This standard states that initial monitoring is required for such work unless:

- A determination has been made that these activities using the work practices outlined are not reasonably expected to result in exposures exceeding PEL; and
- The employer as monitored after March 31, 1992 for the TWA permissible exposure limit and/or excursion limit and the monitoring satisfies the requirements of 29 CFR 1910.1001(d).

According to 29 CFR 1926 (l)(3), all vinyl and asphalt asbestos-containing flooring material shall be maintained in accordance with this paragraph unless the building/facility owner demonstrates, pursuant to paragraph (g) that the flooring does not contain asbestos.

- Sanding of flooring materials is prohibited;
- Stripping of finishes shall be conducted using low abrasion pads at speed lower than 300 rpm and wet methods; and
- Burnishing or dry buffing may be performed only on flooring, which has sufficient finish so that the pad cannot contact the flooring material.

Level A Worker Checklist

- Inspect work area for visible dust or debris. If present, stop work and notify APM.

- Always use wet methods**. NEVER** dry clean-up dust and debris, use a normal vacuum, use compressed air, or high speed abrasive saws in areas with suspected or known ACBM.
- Read over general procedures **before** beginning work.

Tools, Equipment, and Materials

- Ground fault circuit interrupters (GFCIs), extension cords and adapters. GFCIs should be used on any electrical equipment or tools used in O&M work where water might be in use or present in the work area.
- Temporary work lights
- Ladder or scaffold for elevated work
- Wet wipes or bucket with clean water for wet wiping.
- Safety Glasses
- Disposable gloves and boots
- HEPA mask

Wet Wiping

The procedures to be used for wet wiping are as follows:

1. Immerse disposable towel in bucket containing amended water.
2. Wring out towel and fold into quarters.
3. Wipe surface and refold to have a clean face exposed. Do not place towel back into bucket or water will become contaminated and will need to be replaced.
4. Repeat step 3 until all faces of the towel have been used. Obtain a clean towel if more wiping is needed.
5. Dispose of used towels in disposal bags.
6. Dispose of contaminated water a required by applicable regulations.

Steam Cleaning Carpet

The procedures to be used for steam cleaning carpet are as follows:

1. Steam clean carpet using carpet tool.
2. Steam clean all surfaces in parallel passes with each pass overlapping the previous one by one-half the width of the attachment.
3. Once surfaces are cleaned in one direction, clean a second time at right angles to the first cleaning.
4. Water from cleaning process should be treated in accordance with applicable regulations.

Packaging and Labeling Waste

Asbestos-containing waste material from O&M activities should be adequately wet in accordance with the NESHAP requirements, 40 CFR 61.150. Verify waste packaging and other waste disposal requirements with the landfill that will receive the asbestos waste. Disposal bags should be collapsed by evacuating the air from the bag without exposure.

Once collapsed, twist the bag to form a neck and wrap it tightly with duct tape. Fold neck of bag over to form a loop, then again wrap dust tape around the neck and loop.

All waste should be labeled as required by regulations 29 CFR 1910.1200, 1910.1001, 1926.1101, 40 CFR 61.150, and 49 CFR 71 and 180.

OSHA 29 CFR 1926.1101(k)(8) requirement

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

Department of Transportation requirement

RQ	Reportable Quantity, if 1 lb (0.4 kg) or more of friable asbestos
WASTE	for waste material, if applicable
ASBESTOS	shipping name; for domestic transportation only
MIXTURE	for asbestos mixed with a binder or filler, etc.
9	Class 9, Miscellaneous Hazardous Materials, includes asbestos
NA2212	North American identification number; for domestic transportation only
PGIII	Packing Group; for domestic transportation only
LTD QTY	Limited Quantity, if applicable
20OZ	Total Quantity of material described; may abbreviate unit.

NESHAP requirement

NESHAP requires that readily visible and legible warning labels as specified by OSHA be used on waste containers or wrapped materials. Waste material to be transported off the facility site must also be labeled with the name of the waste generator and the location at which the waste was generated.

Disposal of Contaminated Water

Contaminated water from O&M activities should be disposed of in accordance with all applicable regulations. Filtering might be required. If filtering is required, water should typically be filtered through a maximum 5-micron water filter before discharging into a sanitary sewer system, if permitted. If filter unit is not available, contaminated water can be put into leak tight drums and transported to a location with filtering equipment.

POINT OF CONTACT LIST

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Point of Contact List

Asbestos Program Manager

William C. McBride **609-530-7136**

Interim State Safety Officer

Lou Ciccanti **609-530-7168**

Federal Safety Officer

Frank Albanese **609-530-4752**

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RECORD SHEETS

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New Jersey Army National Guard
OPERATIONS AND MAINTENANCE PLAN

CLEANING RECORD

Building: _____

Use this form to document initial and additional cleaning. Provide one (1) form for each activity. File original with the APM in the Asbestos Management Program File.

1. Location cleaned [include homogeneous area (HA) number as listed in asbestos inventory report]:

2. Cleaning method used:

3. Names of person(s) performing cleaning and training dates:

4. Date cleaning was performed:

Asbestos Program Manager: _____
(Print Name)

Asbestos Program Manager: _____
(Signature)

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New Jersey Army National Guard
OPERATIONS AND MAINTENANCE PLAN

FIBER RELEASE EPISODE

Building: _____

Use this form to document **Fiber Releases** caused by falling or dislodging Asbestos-Containing Materials. Provide one (1) form for each release. File original with the APM in the Asbestos Management Program File.

1. Describe fiber release episode including location, type of ACM [include homogeneous area (HA) number as listed in asbestos inventory report], method or repair, preventative measure or response action taken.

2. Date of Fiber Release Episode: _____

3. Names of person(s) performing any work described above and training dates:

4. If ACM is removed, name and location of storage or disposal site:

Asbestos Program Manager: _____
(Print Name)

Asbestos Program Manager: _____
(Signature)

Branch: _____ **Date:** _____

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New Jersey Army National Guard
OPERATIONS AND MAINTENANCE PLAN

WORK REQUEST ASBESTOS REVIEW FORM

File original with the APM in the Asbestos Management Program File.

Date: _____ **Building:** _____

Work to be Performed and Area Involved: _____

_____

_____

Requestor/Title: _____

Asbestos Program Manager Review

1. Is ACM present in the planned work area? _____ **YES** _____ **NO**

2. If present, will ACM be affected by the planned work activities?
   _____ **YES** _____ **NO**

3. Is planned work approved? _____ **YES** _____ **NO**

Comments: _____

_____

_____

Asbestos Program Manager: _____
(Print Name)

Asbestos Program Manager: _____
(Signature)

Branch: _____ **Date:** _____

NOTE: If planned work is disapproved, provide comments to the Requestor; i.e., asbestos abatement work will be coordinated and scheduled or recommend other options for conducting the planned work.

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New Jersey Army National Guard
OPERATIONS AND MAINTENANCE PLAN

EMPLOYEE TRAINING FORM

Every Custodial and Maintenance Employee must attend a 2-hour Awareness Training course. Use this form to document training of custodial and maintenance employee. File the original in the Asbestos Management Program File.

Training Course Title: _____

Instructor's Name: _____

Date of Training: _____ **Number of Hours:** _____

Attendees:

Print Name	Sign Name	Job Title/Unit

The APM certifies that the person(s) listed above, have attended the training course described.

Asbestos Program Manager: _____
(Print Name)

Asbestos Program Manager: _____
(Signature)

Branch: _____ **Date:** _____

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New Jersey Army National Guard
OPERATIONS AND MAINTENANCE PLAN

PERIODIC SURVEILLANCE REPORT

Building Number: _____

Building Description: _____

Instructions:

Periodic surveillance must be conducted in accordance with the NJ ARNG O&M Plan. Each building containing ACBM or PACM must be inspected. Put the date in the appropriate column, fill in the HA #, description of the ACBM/PACM, and area inspected. If the ACBM has been removed, put the date removed in the appropriate column. File the original with the APM in the Asbestos Management Program File.

			Previous Inspection Date:	Current Inspection Date:	
HA #	**Description of ACBM**	**Area Inspected**	**ACBM Condition ***	**ACBM Condition ***	**Date Removed**

* If No Change in ACBM Condition write N/C

Surveillance Inspector's Name: _____
(Print)

Surveillance Inspector's Name: _____
(Signature)

Branch: _____ **Date:** _____

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New Jersey Army National Guard
OPERATIONS AND MAINTENANCE PLAN

ABATEMENT ACTION

Building: _____ **Facility:** _____

Use this form to document removal, enclosure, encapsulation, or repair materials **greater** than 3 sq ft/lf of ACBM. Provide one (1) form for every abatement action. File original with the APM in the Asbestos Management Program File.

1. Provide or attach detailed written description of abatement action.

   Starting Date: _____ Completion Date: _____

   HA Number: _____

2. Name of Abatement Contractor: _____

   Address: _____

   Accreditation #/Agency: _____

3. Name of Abatement Designer: _____

   Address: _____

   Accreditation #/Agency: _____

4. Air Monitoring Laboratory: _____

   Address: _____

   Certification #: _____

5. Name of Waste Disposal Site: _____

   Address: _____

   Permit #: _____

6. Attach Air Monitoring Report, which provides the following information:
   a. Air Monitoring FINAL Clearance Report
   b. Location of Samples and Date Collected
   c. General Description of Analyzing Method Used
   d. Name of Analyst and Signature
   e. Results of Analyses
   f. Laboratory Accreditation Statement (if applicable)

Branch: _____ **Date:** _____

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New Jersey Army National Guard
OPERATIONS AND MAINTENANCE PLAN

OPERATIONS AND MAINTENANCE ACTIVITY

Building: _____ **Facility:** _____

Use this form to document removal, enclosure, encapsulation, or repair materials **less** than 3 sq ft/lf of ACBM. Provide one (1) form for every abatement action. File original with the APM in the Asbestos Management Program File.

1. Description of location(s) of Operation and Maintenance (O&M), fiber release episodes, and cleaning activities.

2. Start Date: _____ Completion Date: _____

3. Describe preventative methods to limit fiber release and to protect workers and occupants:

4. Cleaning method used:

5. If ACBM is removed, name and location of storage or disposal site:

Asbestos Program Manager: _____
(Print Name)

Asbestos Program Manager: _____
(Signature)

Branch: _____ **Date:** _____

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New Jersey Army National Guard

OPERATIONS AND MAINTENANCE PLAN

ASBESTOS HOMOGENEOUS AREA LIST

SITE_____ DATE_____

INSPECTOR_____

HA NO.	MATERIAL	CLASS	PHOTO NO.

COMMENTS: _____

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New Jersey Army National Guard

OPERATIONS AND MAINTENANCE PLAN

ASBESTOS ROOM INFORMATION FORM

SITE_____ DATE _____

INSPECTOR _____

ROOM INFORMATION

ROOM NUMBER_____ ROOM DESCRIPTION _____

Enter "NSM" if no suspect material is present.

HA	TYPE M/TSI/SURF	QUANTITY SF/LF/EA	FRI Y/N	A Y/N	COND G/D/SD	PD L/PD/PSD	EXTENT OF DAMAGE N/L/D	COMMENTS

NOTES: _____

_____

_____

_____

Legend is found on the back.

LEGEND

NSM = NO SUSPECT MATERIAL

MATERIAL TYPE

M = MISCELLANEOUS
TSI = THERMAL SYSTEM INSULATION
SURF = SURFACING (SPRAYED, TROWELED, BRUSHED ON)

POTENTIAL FOR DISTURBANCE

L = LOW
PD = POTENTIAL FOR DAMAGE
PSD = POTENTIAL FOR SIGNIFICANT DAMAGE

MATERIAL QUANTITIES (UNITS)

SF = SQUARE FEET
LF = LINEAR FEET (PIPE RUNS, WIRE INSULATION)
EA = EACH (PIPE FITTINGS, WITH SIZE IN INCHES)

EXTENT OF DAMAGE

L = LOCALIZED
D = DISTRIBUTED
N = NONE

COND = CONDITION

G = GOOD
D = DAMAGED
SD = SIGNIFICANTLY DAMAGED

FRIABLE (FRI)

Y = YES
N = NO

ASSUMED (A)

Y = YES
N = NO

ROOM NUMBERING

101 = 1ST FLOOR, ROOM 01
202 = 2ND FLOOR, ROOM 02
A03 = ATTIC, ROOM 03
B04 = BASEMENT, ROOM 04
G01 = INSPECTOR'S GALLERY, ROOM 01
M05 = MEZZANINE, ROOM 05
E01 = EXTERIOR, ROOM 01
P101 = 1ST DETACHED BUILDING, ROOM 01